TECHNOLOGY DEPARTMENT

TEXTILE WORLD

A McGraw-Hill Publication ---------- DECEMBER • 1948

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DETROIT

Tagged Atoms—

A New Tool For Textile Technicians

Page 103

...e Co... for HUMIDIFYING
... Wo...len Spinning and Weaving

...idifi... ion can solve many woolen-mill prob... of ... uniformity, fabric weight, pattern ...ration, ...nd dry stock. Details are in the story ... page ...4.

FIBER SORTERS Aid Cotton-Mill Operation

Cotton spinning qualities, bale mixes, machine speeds and settings, waste reductions are some factors that proper use of the cotton-fiber sorter can foretell or analyze. See page 109.

Snagging Is Major HOSIERY PROBLEM

Proper sizing and oiling can reduce snags which are caused mostly by looping and seaming. Many other steps to prevent snags are also described in the story on page 129.

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Millions of yards from gray to finished

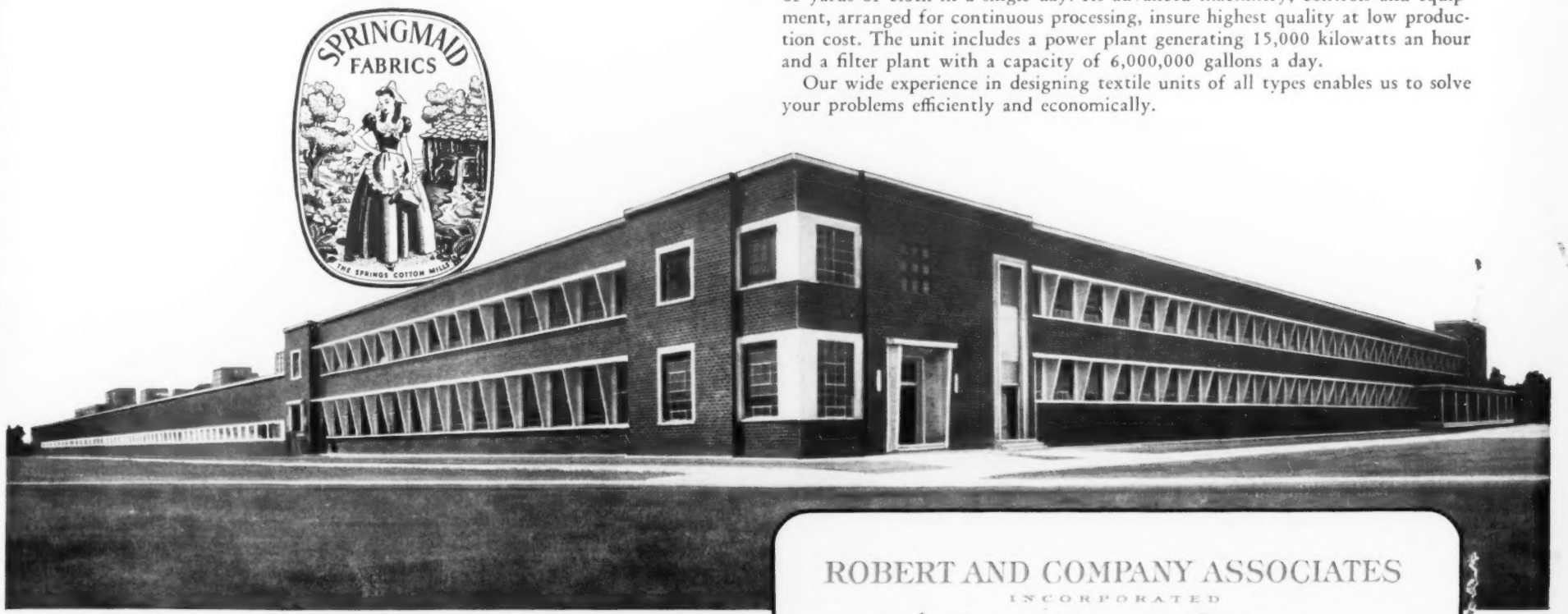
IN A SINGLE DAY

In the past three years Robert and Company Associates have been selected to design several of the nation's largest and most advanced textile plants.

Latest of these is the new finishing plant just completed for The Springs Cotton Mills near Lancaster, South Carolina.

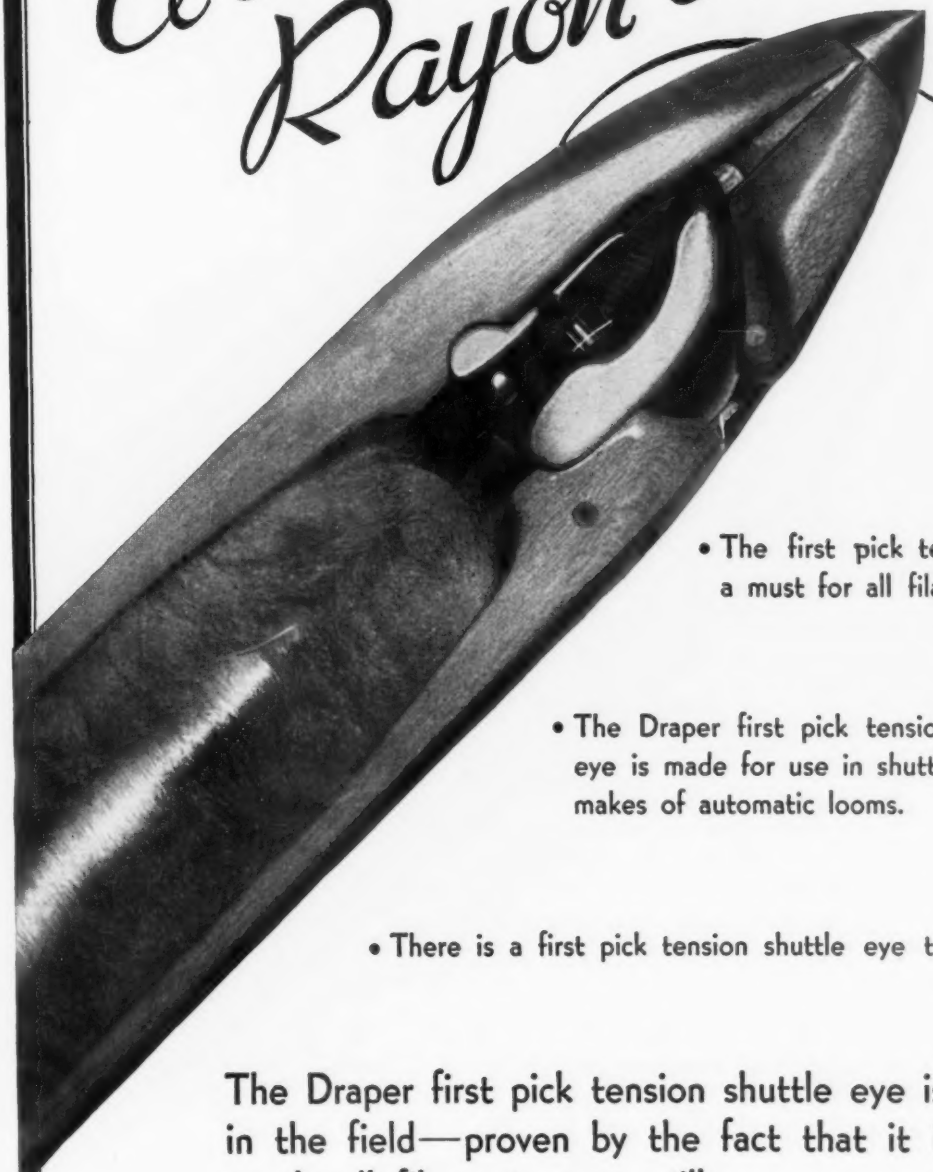
This revolutionary bleachery, covering 600,000 square feet, can finish millions of yards of cloth in a single day. Its advanced machinery, controls and equipment, arranged for continuous processing, insure highest quality at low production cost. The unit includes a power plant generating 15,000 kilowatts an hour and a filter plant with a capacity of 6,000,000 gallons a day.

Our wide experience in designing textile units of all types enables us to solve your problems efficiently and economically.



ROBERT AND COMPANY ASSOCIATES
INCORPORATED
Architects and Engineers
ATLANTA

A Must For Rayon Weaving



- The first pick tension shuttle eye is a must for all filament rayon weaving.
- The Draper first pick tension shuttle eye is made for use in shuttles on all makes of automatic looms.
- There is a first pick tension shuttle eye to meet all conditions.

The Draper first pick tension shuttle eye is the best in the field—proven by the fact that it is used in nearly all filament rayon mills.

DRAPER CORPORATION

The World's largest manufacturer of automatic loom shuttles.

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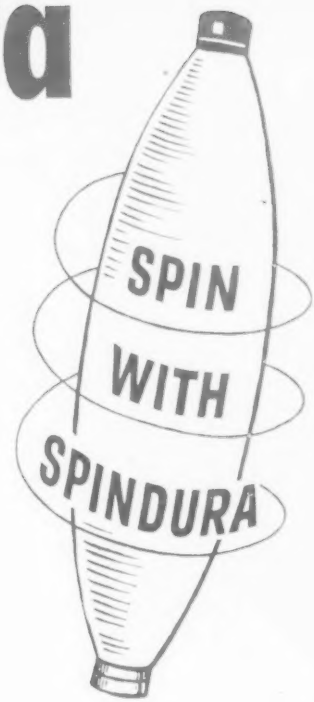
P erformance
I mproves
N otably

With Spindura



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Texaco Spindura Oils are special spindle lubricants, highly resistant to oxidation, thickening and fogging. They prevent formation of gummy deposits . . . reduce vibration, hunting and lagging . . . eliminate wasteful power "drag." They permit higher spindle speeds and heavier packages—increase production and lower costs wherever they are used.

Texaco Spindura Oils come in a complete viscosity range to meet all spindle manufacturers' requirements for effective lubrication of spinning, throwing, spooling and twisting machines.

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REG. T.M.

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

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DECEMBER, 1948

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THE *Long-Range* VIEW

Whole-Hearted Adoption

The most important trend in the textile industry is the generous and whole-hearted adoption of technically trained personnel and scientific operating methods, according to C. Norris Rabold, talking before the annual meeting of the American Association of Textile Chemists & Colorists. He paid special tribute to the work of textile chemists, but the orchids he gave them could be given to technicians in all branches of the industry.

A few years ago, the technically trained man was not greeted with "whole-hearted adoption." He was treated more like the proverbial red-headed stepchild. It is a credit to our industry that technicians and scientific operating methods are now as universally acclaimed as they once were unfairly discredited.

As we understand better the advances that are being made in producing textiles, we are better prepared to see the significance of new ideas such as the applications of tagged atoms, described in this issue, or the use of spectographic studies to help understand textile processing. Again quoting Rabold, "Each new development breeds another . . . we are entering a new era of chemical and engineering progress."

How does all this affect you? For one thing, you cannot escape being affected—if not directly, indirectly through competition. As technically trained men and better operating methods become available, you can investigate or not, as you wish. You can employ or reject, as you see fit.

Much technology that is developed, obviously, is not tailor-made for you; but most can be adapted, in part at least, to your needs. It is in developing ideas from others that you can expect to gain the most. The same general idea applies to hiring technical men. It is a mistake to expect a newly hired man to work miracles for you. He must first understand your needs and problems; then he can call on his background and on his ability to think in order to be of benefit.

In talking with the head of one of our more progressive plants, we were told that one man on his staff spent his full time investigating technology both here and abroad. This technologist had gathered information on many processes in which his plant was not directly interested. This information was, nevertheless, considered valuable as a check on trends and on competition. Only small parts could be used in the particular plant, but even those small parts were quite valuable.

A wise step that many mills are taking is to separate development and research from production operations. Perhaps there should be a three-way separation among (1) production of goods, (2) control of processes, and (3) development of new technology and products. Of these three divisions, the second holds the key to successful present operations, the third to success in the future.

As we have said before, the time is past when a mill can be set up to produce one type of textile, year in and year out. The time is past when control and development can be left to production personnel.

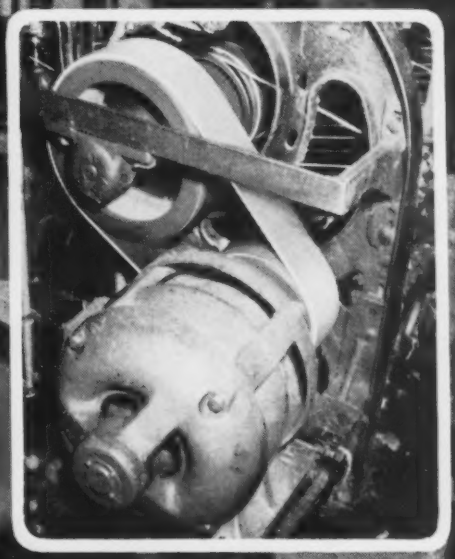
Today, men directly responsible for production must, in general, spend more time on labor relations than ever before. The time they spend coordinating employees must be taken from other duties. But more significant than lack of time is the unreasonableness of expecting a production man to be his own quality-control agency and, at the same time, to improve the technology of his operations.

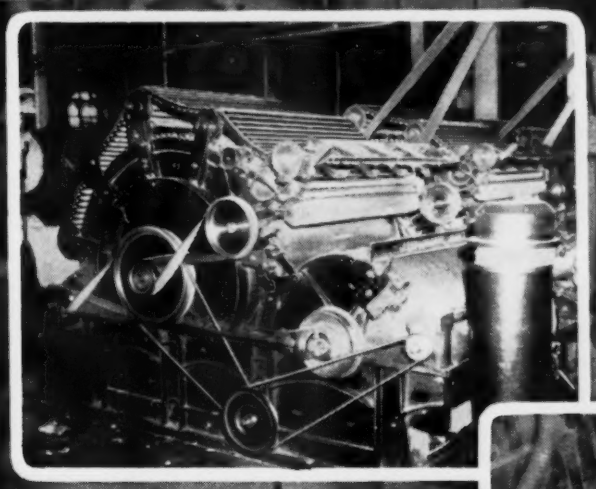
It is true that exceptional mill men are able to do all the jobs listed, but undoubtedly they would do even better if they were able to concentrate on the one for which they are best qualified. As high-caliber men are attracted by our rejuvenated textile industry, they must be met with more than just "whole-hearted adoption"—they must be fitted into a new scheme of operations.

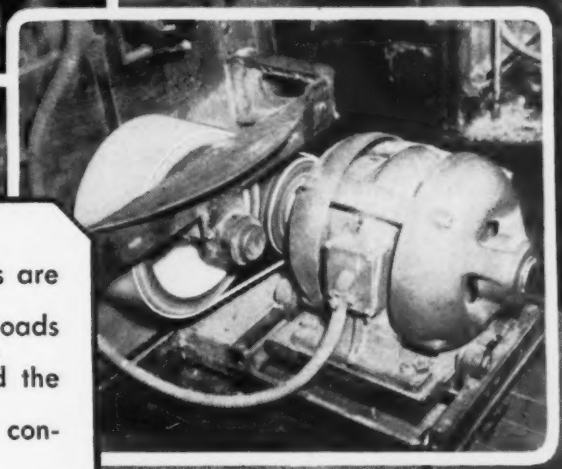
C. H. Bending

in this SOUTHERN TEXTILE MILL...

RHOADS *Tannate* LEATHER BELTS







Spinning frames and cards are equipped 100% with Rhoads Tannate Leather Belts, and the belts are operating under continuously high humidity.

Let us tell you how Tannate helps increase production and lower cost.

HYDRAULIC PACKINGS AND OTHER MECHANICAL LEATHER PRODUCTS

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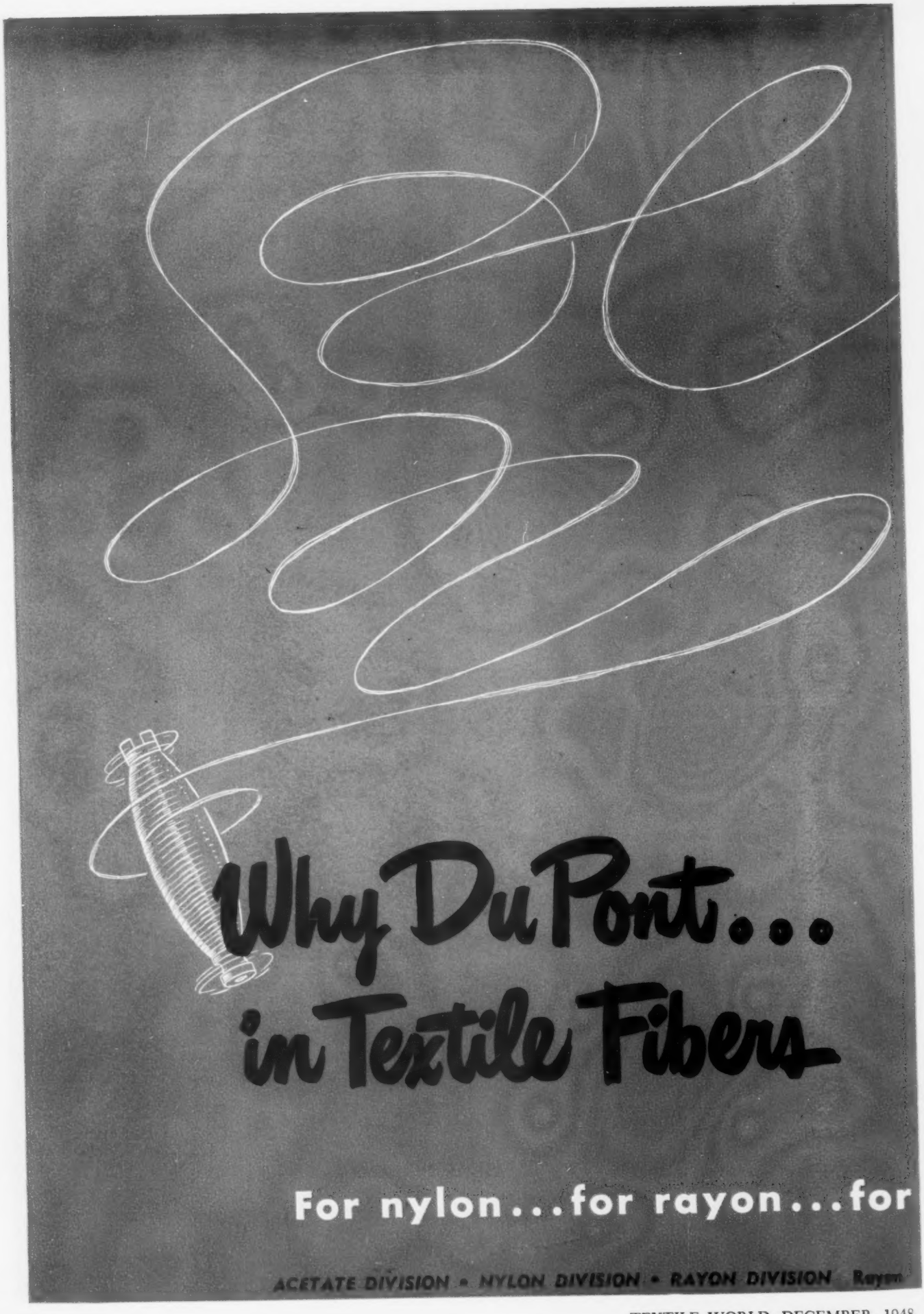
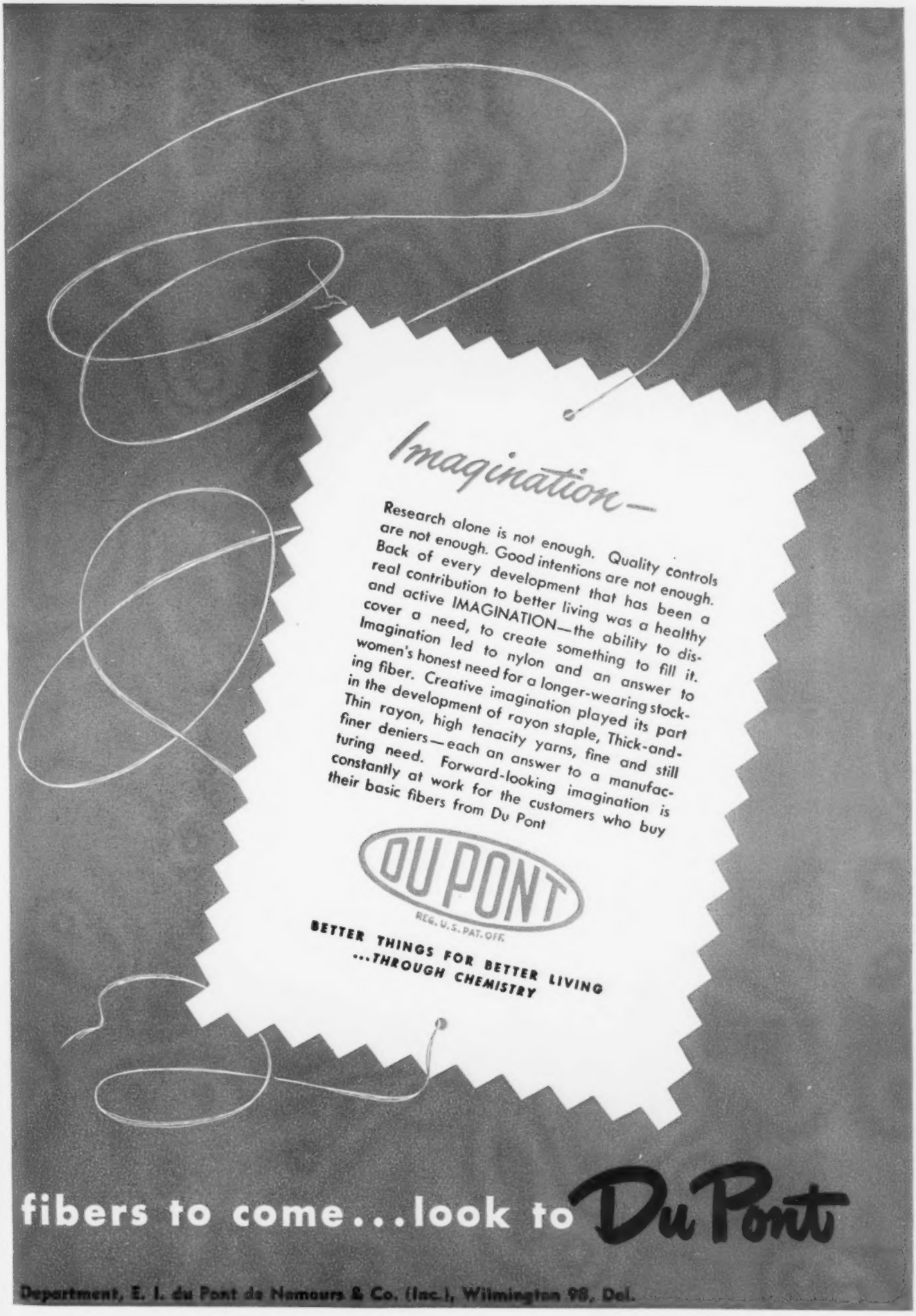
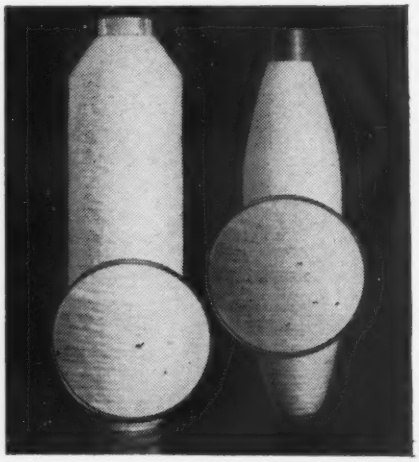
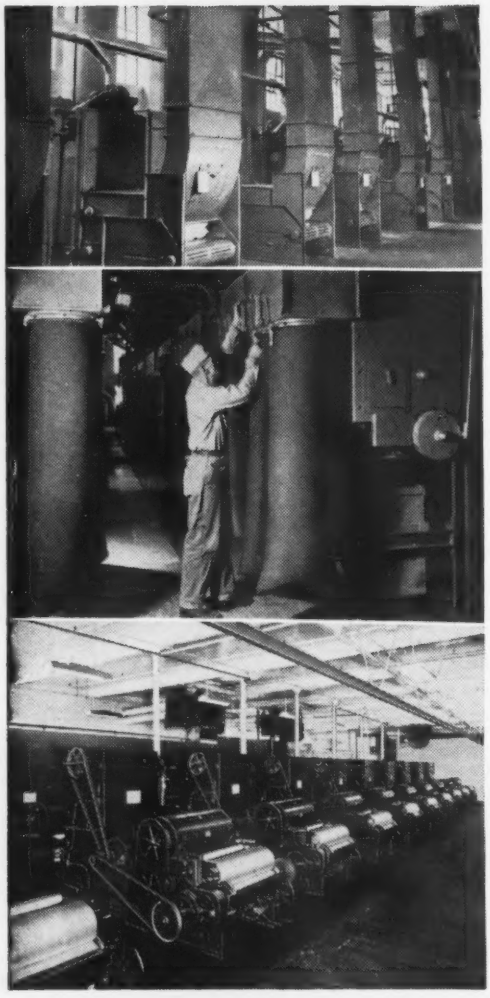

Why DuPont...
in Textile Fibers
For nylon...for rayon...for
ACETATE DIVISION • NYLON DIVISION • RAYON DIVISION Rayon


Imagination—
Research alone is not enough. Quality controls are not enough. Good intentions are not enough. Back of every development that has been a real contribution to better living was a healthy and active IMAGINATION—the ability to discover a need, to create something to fill it. Imagination led to nylon and an answer to women's honest need for a longer-wearing stocking fiber. Creative imagination played its part in the development of rayon staple, Thick-and-Thin rayon, high tenacity yarns, fine and still finer deniers—each an answer to a manufacturing need. Forward-looking imagination is constantly at work for the customers who buy their basic fibers from Du Pont
DU PONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY
fibers to come...look to Du Pont
Department, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Del.



Impurities and defects in the yarn or thread inevitably follow insufficient cleaning and poor opening. These defects can be reduced to the minimum by using "1948 SACO-LOWELLized" Opening and Picking Processes.

SACO-LOWELL ..always FIRST in Opening, Cleaning, Picking



Modern opening and picking is built around six major developments *pioneered by SACO-LOWELL:*

1. Cleaning and Blending Feeders
2. Dust and Waste Extractors
3. Reserve Box with Control Distribution
4. One-Process Picking with Blending Reserve
5. Automatic Air Filters for Picker Room
6. Synchronized Electric Control for Opening and Picking

All originated by SACO-LOWELL,

these notable engineering achievements have saved vast sums through better cleaning, more uniform blending, reduced fibre damage, and regularity in weight and lap structure.

Removal of Impurities

such as peppery leaf, dust, seed fragments, motes and neps can best be accomplished in the opening and picking room... especially in a conditioned atmosphere made possible by the use of air recirculated through our automatic filters.

Today, with the ever-increasing use of cotton picked mechanically, the problem of *cleaning in the early stages* takes on added significance. Mills that have not had the opportunity to SACO-LOWELLize in recent years will find discussion with our engineers interesting and helpful.

(*Top*) Chutes from blending room to blending feeders
(*Center*) An impressive line of No. 6 Air Filters
(*Bottom*) Pickers in a large Southern mill

SACO-LOWELL

60 BATTERYMARCH STREET, BOSTON 10, MASS.

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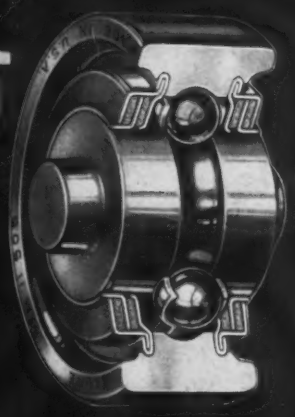
126 Million Self-Sealed New Departure Ball Bearings Can't be Wrong



Treadle Roll Ball Bearing built for Draper Looms. Sealed and lubricated for life. For more facts, ask for booklet "Sealed."

Vertical Tension Pulley Ball Bearing for textile machines. Has own built-in circulating oiling system.

Originated, developed and
Built to be forgotten by

NEW DEPARTURE

nothing rolls like a ball

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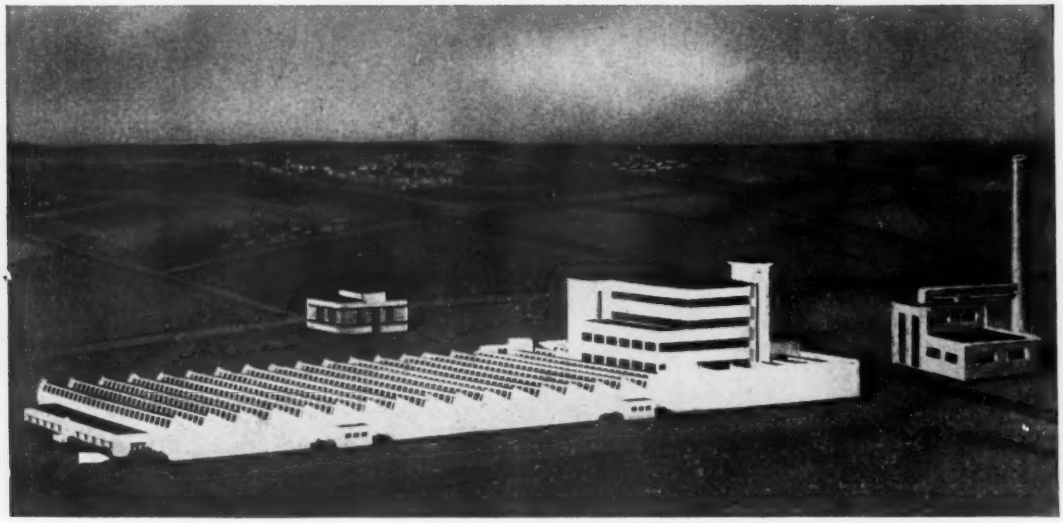

Egyptian Rayon Plant Starts Production

Societe Misr Pour La Rayonne, S.A.E., Cairo, the most modern plant of its kind in the world, is now producing rayon. This plant is unique because it is equipped to manufacture cellophane in addition to filament rayon and rayon staple fiber.

Completely a KOHORN project, the plant's design and chemical processes assure the more rapid and safe transformation of raw materials into high quality finished products. KOHORN rayon-producing and cellophane casting machinery give the new plant the most modern machinery available. Technical management by KOHORN experts assures efficient operation from the outset, and training for the owner's personnel.

This is one of the most extensive projects ever accomplished in the Middle East. Its completion points out the superior qualifications of KOHORN for the establishment of the additional rayon plants that world markets need . . . without delay.

COMPLETE PLANTS for Filament Rayon, Rayon Staple Fiber and Cellophane equipped in 12 months.

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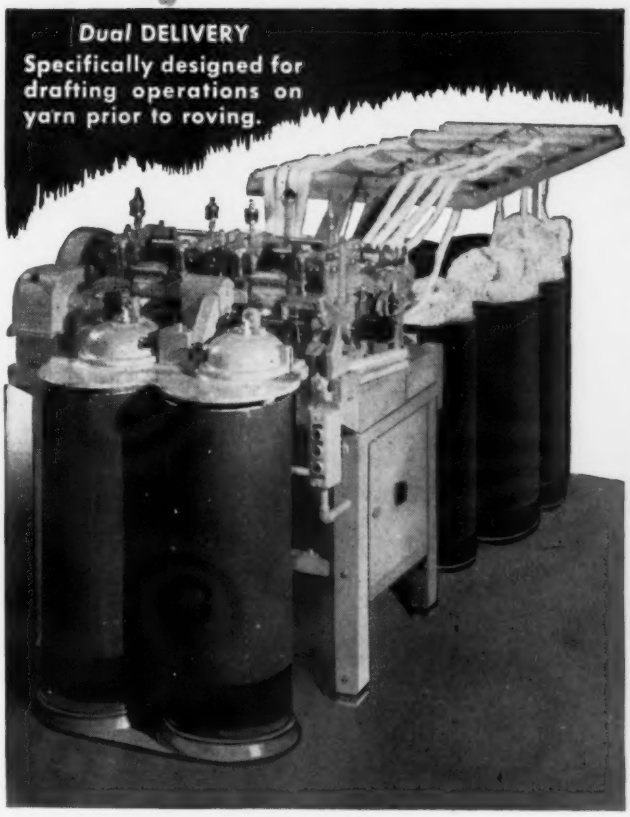
Pioneers of the Rayon Industry

Faster on the "draw"...



Warner & Swasey

DOUBLE HEAD FULL INTERSECTING

Pin Drafter

TRADE MARK

IMMEDIATELY upon introduction, the Warner & Swasey *Dual* Delivery Pin Drafter began hanging up record performances for speed of delivery and quality of delivered sliver, on yarn processing prior to roving.

To further speed production and to achieve still further savings, a *Quad* Delivery Pin Drafter is now introduced. It is designed for drawing operations where entering weight is 400 grains, or less per yard for each delivery—permitting a total aggregate of entry of 800 grains per yard per head. Its effect is to double production.

Both machines are in a class by themselves. They introduce an advanced application in yarn drafting on straight wool, blends of straight wool, wool and synthetic cut staple, and certain types of 100% synthetic cut staple.

Write for free descriptive booklets and information on how you may have a test run on your material. Address inquiries to Textile Division of Warner & Swasey Co., Cleveland, Ohio.

For Descriptive Booklets Mail This Coupon Today

WARNER & SWASEY
Cleveland
TEXTILE MACHINERY DIVISION

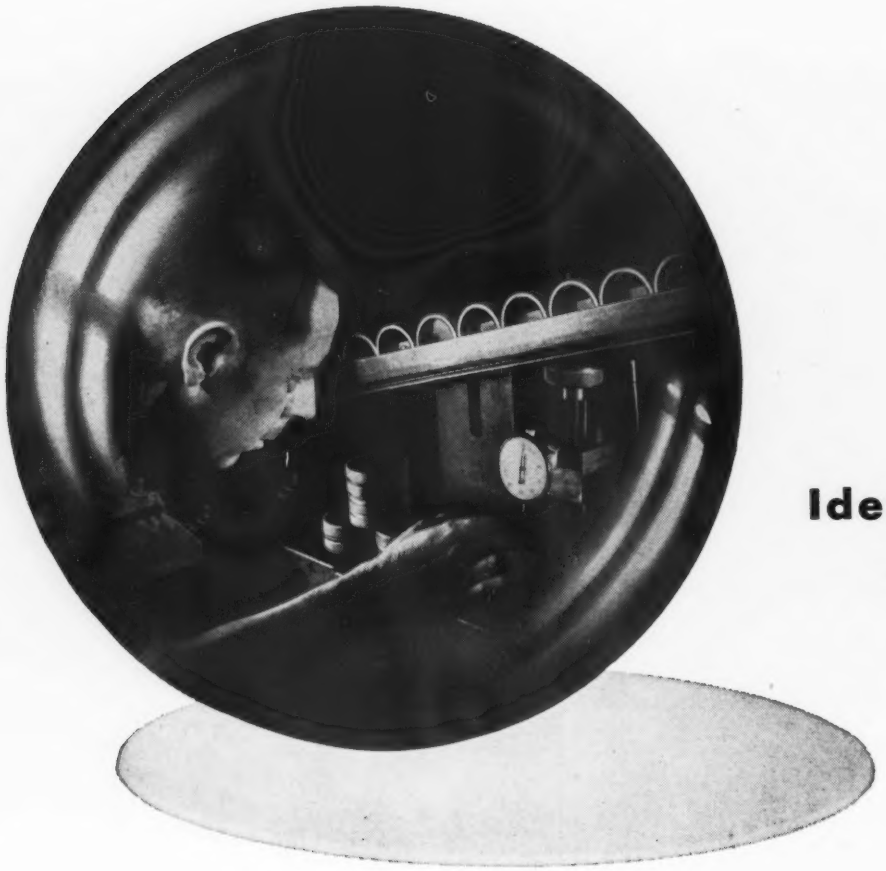
The Warner & Swasey Company
Textile Machinery Division, 5701 Carnegie Avenue
Cleveland 3, Ohio

Yes, I would appreciate additional information about the Warner & Swasey Quad Delivery Pin Drafter _____
or the Warner & Swasey Dual Delivery Pin Drafter _____

Name _____ *Title* _____
Company _____
Address _____
City _____ *Zone* _____ *State* _____

D-1198

You can do it better, faster, for less . . . with a Warner & Swasey



Identical Twins

PARALLELISM in a ball bearing is one of its most vital dimensions. In Federal Ball Bearings it's a mechanical certainty because Federal equipment grinds *both sides* of an outer race *at the same time*. And sensitive gauges on all machines control this accurate dimension which is maintained throughout production.

Will Federal Bearings take the heavier loads? Crush tests of through-hardened balls and race rings see to that. Fatigue tests under pre-determined thrust and radial loads further guard against failure.

Are Federals quiet? They have to be to pass running tests in Federal's soundproof "listening posts." After all dimensions and tolerances are checked, *every* bearing is tested for quiet operation.

So it goes, all along the Federal manufacturing and inspection cycle... *over 100 individual production, inspection and cleaning operations go into every Federal Bearing — with every fourth operator an inspector.*

It's Federal's way of making *sure* that a bearing is neither too tight nor too loose, that the ball track is ground to a chatter-free finish and just the right radius, bores are cylindrical, not tapered or bell-mouthed and the sides of the rings are parallel to each other and the ball track.

In textile equipment it means higher speeds, heavier load capacity, power saving and over-all friction-free performance.

There's a Federal representative near you to help select the type and size for your particular application. Our catalog "K" describes the complete Federal line. Write for it today.

THE FEDERAL BEARINGS CO., INC. • POUGHKEEPSIE, NEW YORK

Makers of Fine Ball Bearings

REPRESENTATIVES LOCATED AT
2640 Book Tower, Detroit 26, Mich.
402 Swetland Bldg., Cleveland 15, Ohio
8 South Michigan Ave, Chicago 3, Ill.

Quality since 1908

FEDERAL BALL BEARINGS

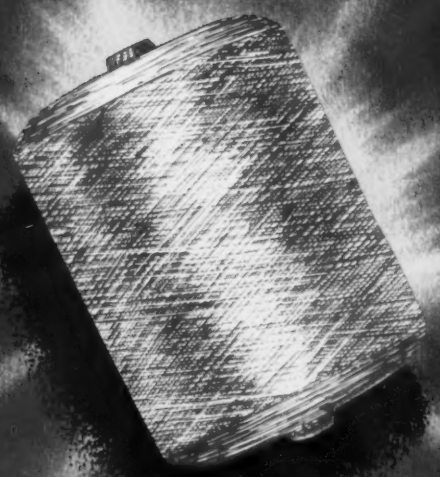
ONE OF AMERICA'S LEADING BALL BEARING MANUFACTURERS

What is it that has . . .

DIAMOND-LIKE COLOR

DIAMOND-LIKE QUALITY

DIAMOND-LIKE VALUE



IT'S FLORENCE TAILORED COLOR YARN . . . THE YARN THAT MAKES

your end product better!

Florence Tailored Color offers you three advantages that enable you to make your end product better: COLOR individually tailored by our laboratory experts to give you the exact shade and exact color fastness you specify . . . QUALITY of the very highest, which is controlled throughout . . . VALUE assuring you the greatest opportunity for profit.

Florence Tailored Color is the complete processing of cotton, wool, synthetic and blended yarns including dyeing, bleaching, finishing and winding. We *tailor color* yarn either supplied by you or obtained by us. Take advantage of the exclusive features of *Florence Tailored Color* and make your product better. For full information write today.

FLORENCE THREAD CO., INC.

ESTABLISHED 1894

Fairview Street, Riverside, New Jersey—Phone Riverside 4-0211

New York Sales Office: 55 W. 42nd Street, New York 18, N. Y.

Package Dyers and Processors of Cotton, Wool, Synthetic and Blended Yarns

Processors and Distributors of "USTEX"* Industrial Sewing Threads

*Trade Mark Registered U. S. Pat. Off. By United States Rubber Company

DRAPER CORPORATION world's largest loom manufacturer

LOWERS PRODUCTION COSTS WITH

J & L COLD-FINISHED JALCASE STEEL

J&L STEEL

Mr. Joseph Whalley holds a shuttle from a modern Draper high-speed rayon loom to show the Jalcase tips.—Demonstration Room in Draper Corporation's modern plant, Hopedale, Massachusetts.

Shuttle Tips* made of JALCASE last longer . . . are easier to machine and heat treat.

Most likely the fabric in your broadcloth or oxford shirt was woven on a Draper loom, because Draper Corporation is the world's largest manufacturer of cotton and rayon looms. —And on many of the shuttles in these famous looms, the tips are made from J&L COLD-FINISHED JALCASE, the *original* open-hearth free-machining steel.

These tips must withstand *millions* of blows from the "pickers" that send the shuttle flying back and forth across the loom as many as *225 times a minute*. The steel must have uniform heat-treating characteristics to produce tips with *hard* points, *soft* shoulders and *tough* stems. Besides, Draper wants a steel that machines freely to a smooth finish at high speeds, and a steel that conserves tool life. That's why Draper uses J&L COLD-FINISHED JALCASE. It reduces production costs!

Here is a steel that is practically "tailor-made" to your requirements. From the ten grades of JALCASE, you can select just the right properties that suit *your* manufacturing conditions best. The result is: Higher production . . . Longer tool life . . . A better product. No wonder that J&L COLD-FINISHED JALCASE has been the *leading free-machining steel* for more than 25 years!

We have just published a new booklet describing the ten grades of J&L COLD-FINISHED JALCASE Steel. Let us send you a copy. It's free. The coupon is for your convenience.

Jones & Laughlin Steel Corporation
441 Jones & Laughlin Building
Pittsburgh 19, Pennsylvania

Please send me your new booklet on J&L COLD-FINISHED JALCASE—the *original*, open-hearth, free-machining steel.

NAME_____

ADDRESS_____

_____

JONES & LAUGHLIN STEEL CORPORATION

From its own raw materials, J&L *manufactures a full line of carbon steel products, as well as certain products in* OTISCOLOY *and* JALLOY *(hi-tensile steels).*

PRINCIPAL PRODUCTS: HOT ROLLED AND COLD FINISHED BARS AND SHAPES • STRUCTURALS AND PLATES • HOT AND COLD ROLLED STRIP AND SHEETS • TUBULAR, WIRE AND TIN MILL PRODUCTS • "PRECISIONBILT" WIRE ROPE • COAL CHEMICALS

Woolens, Worsteds, Cottons and Synthetics...

Here's Help to make them better!

No matter what fabric you're processing, you'll find that it will pay you to investigate the special Socony-Vacuum textile oils developed for your specialty.

For instance, if it's woolens, you can do a better job—and save money—with S/V Woolrex Oils to lubricate and condition your stock. Or, if it's worsteds, you'll get lofty white tops, better overall results, with S/V Worstex Oils.

If you're working with cottons... for general use or for mechanically pre-shrinking to definite standards, you should know all about S/V Textile Finishing Oils A and B for their excellent softening and re-wetting effects. Or, if you're treating for water-repellency, you can't beat the S/V Fabrisecs for maximum repellency with minimum amounts.

Vital for rayon processors, the complete Socony-Vacuum line includes special coning and soaking oils to lubricate and soften fibers.

Get full details now on the products that apply to your particular needs.

Process Products
SOCONY-VACUUM

Socony-Vacuum Process Products

SOCONY-VACUUM OIL COMPANY, INC.
26 Broadway, New York 4, N. Y., and Affiliates:
MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.

ESTABLISHED 1898

American Paper Tube Co.

Woonsocket, R.I. Greenville, S.C.

A·P·T
The Finest of Yarn Carriers

Woonsocket, R.I.
December, 1948

To The TEXTILE INDUSTRY

Gentlemen:

As we pause on the completion of our first half century of service to the textile industry, and rededicate ourselves to the principles that have guided us through these fifty years of progress, we wish to express our appreciation and gratitude to the countless number of textile executives, technicians and operatives whose knowledge, skill and friendship have made possible the contributions we have made to this great industry of yours.

From our humble beginning with two machines manufacturing cop tubes for woolen mule spinning to our present facilities of two modernly equipped plants producing carriers for virtually every branch of the textile industry, we have consistently striven to produce products that will perform for the textile mill in a better and more efficient manner. We never try to sell a product but always strive to do a job. In other words, we translate, through our plant facilities, our technical knowledge, and our research, the needs and desires you have, into the carriers that do your job the way you want it done.

We thank all of you whose patronage and good will have made our growth and progress possible and express to your great industry our continued readiness and desire to serve you to the fullest extent possible within our means.

50th Anniversary
1898 1948

Respectfully yours,
AMERICAN PAPER TUBE COMPANY
By *Harold L. Amrhein*
Harald L. Amrhein
President and Treasurer

SANDOZ PRESENTS *The color achievement of the month*

Ever-Blooming Floral BY MOHAWK

Here, in Mohawk's Marlborough, an Axminster weave, you see not only the fresh beauty of carpet artistry at its finest, but also the long-lasting beauty of expert dyeing.

To keep the richness of these colors alive for years to come, despite sunlight, wear and cleaning, Mohawk—like so many other leading rug and carpet weavers—insists upon the quality in dye-stuffs represented by Sandoz.

For carpets—and ladies' wear, too—a combination of

ALIZARINE LIGHT BLUE 4 GL
AZO RUBINOLE 2GS
XYLENE LIGHT YELLOW 2G

is producing mode shades of maximum fastness to light. Furthermore, this combination assures the dyer of level dyeings regardless of the shade.

And for other colors in a wide range of acid, chrome and direct colors . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you see in these Sandoz advertisements.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.
Application laboratories and stocks at Boston, Philadelphia, Charlotte, Chicago, Los Angeles, Toronto. • Other branches at Providence and Paterson.

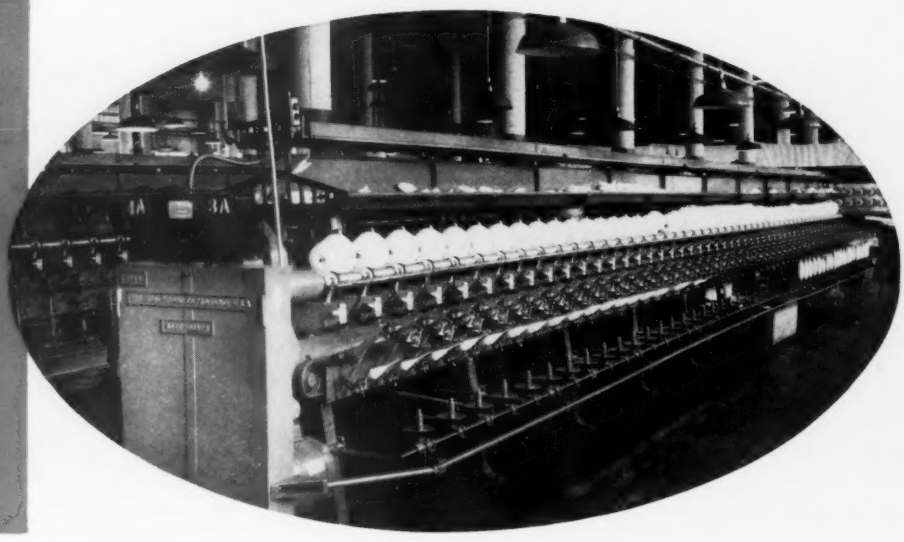
SANDOZ *thinks ahead with textiles*

SANDOZ

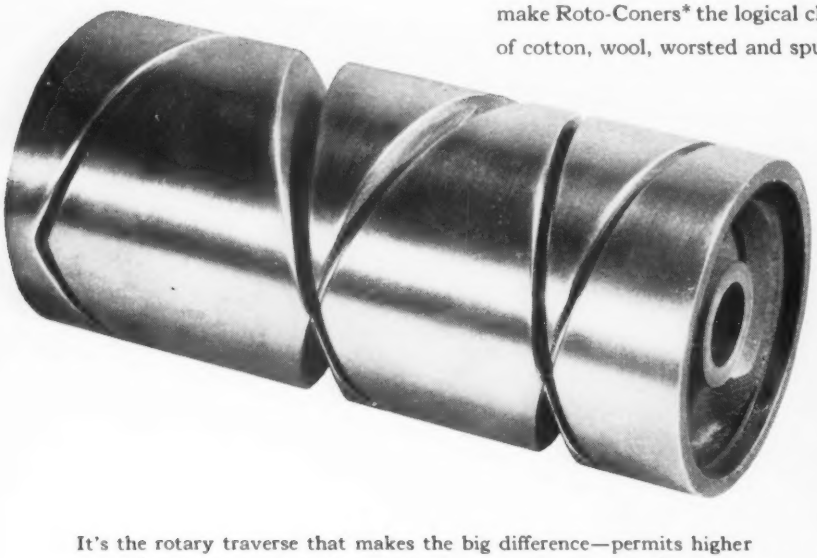
The Mill is

Riverside Worsted Co., Inc.

Woonsocket, R. I.



More Roto-Coners* with the *all-metal* rotary traverse are being installed in woolen and worsted mills than any other type of winder. High speed, low maintenance, and uniformly excellent quality of packages make Roto-Coners* the logical choice for production of cones and tubes of cotton, wool, worsted and spun rayon.



It's the rotary traverse that makes the big difference—permits higher speed (there are no cams to restrict traverse and yarn speed), reduces maintenance (simplified design, easy cleaning, splash system of oiling), improves package quality (roll-cuts eliminated, all packages uniform). Other features include quietness of operation, humidity-proof, and various types of tensions and slub catchers, used for different yarns and packages, which contribute further to the satisfaction of the knitters, weavers and dyers who use the product of the machine.

The Machines are

Roto-Coner* drum winders with the exclusive *Rotary Traverse*

*®

UNIVERSAL WINDING COMPANY

Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

Agents in every principal textile center throughout the world

Winding and Twisting Machinery for Natural and Synthetic Yarns

ROTO-CONER* *the only machine with the rotary traverse*

Economize with cork

Armstrong's Cork Cots save you money in these ways:

1. Cork roll coverings are low in initial cost. 2. Cork cots reduce assembly time as much as 50% because they are seamless and ready glued. 3. Cork cots have a long service life.

The extra "grip" of Armstrong's Cork Cots drafts high quality yarn. Their extra friction also carries clearer waste well back onto the clearer boards, so there's no danger of waste's being nipped into the work. Thus clearer picking is minimized and the number of slubs is reduced.

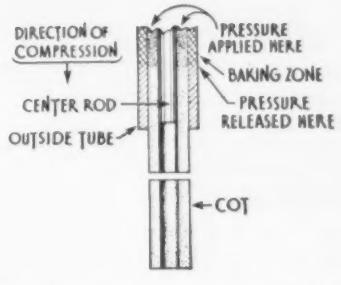
Cork also reduces clearer waste as much as fifty per cent.

The extra resilience of Armstrong's Cork Cots provides quick recovery from most laps and hard ends. And because these cots are extruded, they have no hard or soft spots to grip the yarn unevenly.

Armstrong's Cork Cots retain their spinning properties during a long initial service life. They can be rebuffed when necessary as many as three or four times.

Ask your Armstrong representative for facts and figures on Armstrong's Cork Cots. Or write today to Armstrong Cork Company, Textile Products Department, 8312 Arch St., Lancaster, Pa. Cork cots are available for export.

Extrusion Process Produces Seamless Cork Cots



Armstrong's Cork Cots have no structural weakness to cause premature breakdown. Each cot is uniform in density from inside to outside, from end to end. Each compresses evenly, spins stronger yarn.

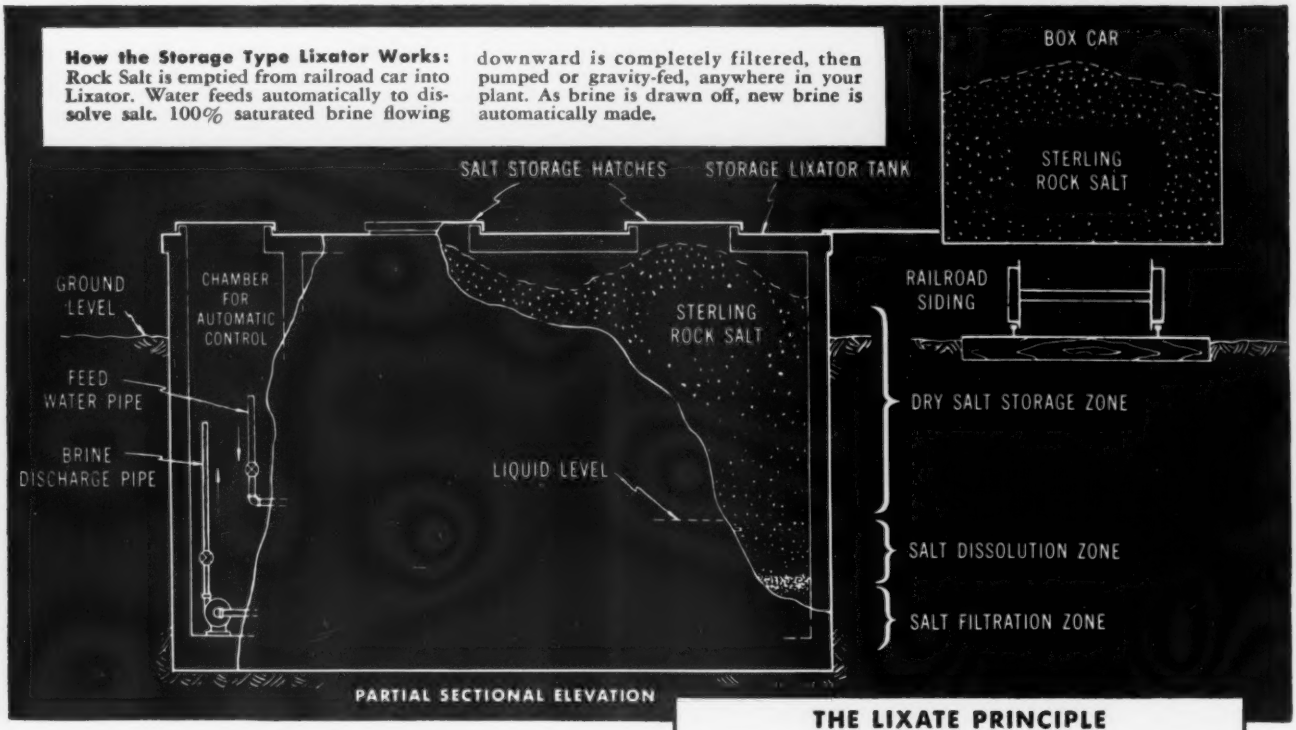
ACCOTEX IS A REGISTERED TRADE-MARK.

Better running work . . . more poundage

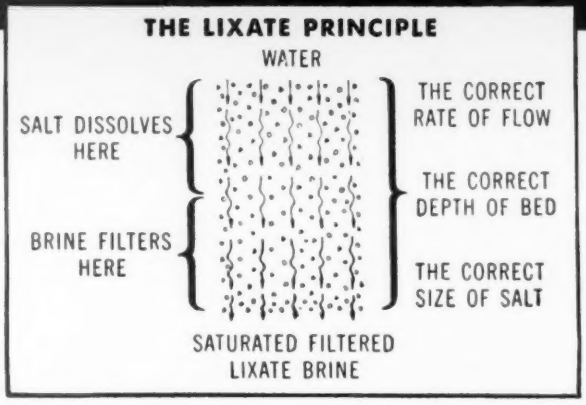
ARMSTRONG'S CORK COTS

ACCOTEX COTS • ACCOTEX APRONS

A Storage Type Lixate Rock Salt Dissolver Suitable for a Textile Mill


How the Storage Type Lixator Works: Rock Salt is emptied from railroad car into Lixator. Water feeds automatically to dissolve salt. 100% saturated brine flowing downward is completely filtered, then pumped or gravity-fed, anywhere in your plant. As brine is drawn off, new brine is automatically made.
BOX CAR
STERLING ROCK SALT
SALT STORAGE HATCHES
STORAGE LIXATOR TANK
GROUND LEVEL
CHAMBER FOR AUTOMATIC CONTROL
FEED WATER PIPE
BRINE DISCHARGE PIPE
STERLING ROCK SALT
LIQUID LEVEL
RAILROAD SIDING
DRY SALT STORAGE ZONE
SALT DISSOLUTION ZONE
SALT FILTRATION ZONE
PARTIAL SECTIONAL ELEVATION

Storage Type Lixators Cut Salt-Handling Costs, Assure Spot-Free, Even Dyeing for Cannon Mills



SINCE installing two *International*, Storage Type Lixators to produce brine in volume as the exhausting agent for its dye baths, Cannon Mills' Plant No. 6 has recorded these benefits:

Important operating savings.

Virtual elimination of laborious salt handling.

Elimination of spotty, uneven dyeing due to undissolved salt.

In addition, where operators once had to stir salt into 32 separate machines, all machines are now supplied with brine *piped* from two interconnected Lixators which are *wholly automatic in operation.*

An exclusive International development, the Lixator produces 100% saturated, crystal clear, self filtered brine from Sterling Rock Salt.

With long experience cooperating with the textile industry, *International's* engineers are thoroughly familiar with the uses of salt as brine in dyeing machines and vats, and for regenerating zeolite water softeners. Free consultation is invited on the efficient handling of salt as brine in standard Lixators, as well as counsel in designing and building Storage Type Lixators to match any brine needs.

The attached coupon will receive prompt attention.

INTERNATIONAL SALT COMPANY, INC.
Dept. TW-12, Scranton, Pa.

Gentlemen:
I would like complete information about the Storage Type Lixator.

*Name*_____

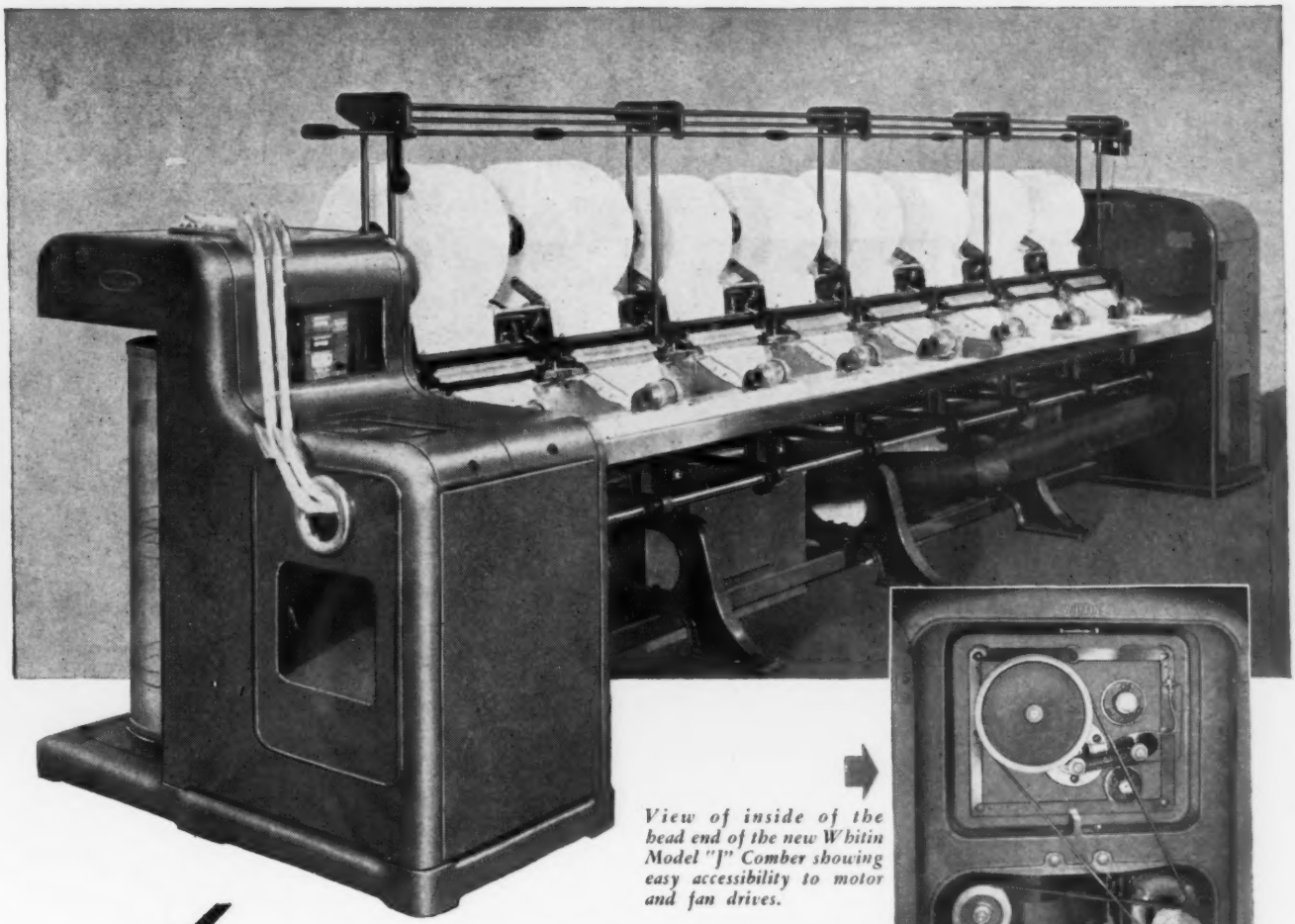
*Firm*_____

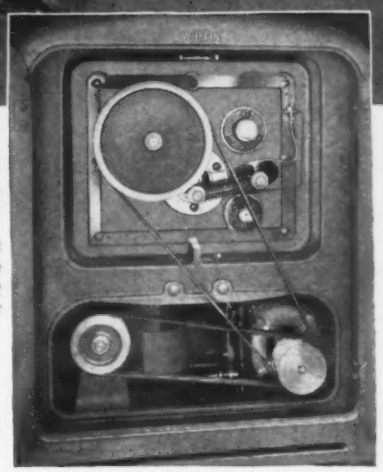
*Street*_____

*City*_____ *State*_____

The **LIXATE** *Process*
Reg. U. S. Pat. Off.
for making brine

INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.





View of inside of the head end of the new Whitin Model "J" Comber showing easy accessibility to motor and fan drives.

Announcing.. the NEW WHITIN Model "J" High-Speed COMBER

The new Whitin Model "J" eight-head, high-speed comber represents a major advance in the complicated art of combing. Production speeds heretofore thought to be impossible have been reached, yet the combed sliver produced is distinctly superior in quality. Many features of earlier combers which have been successful in mill operation have been retained and undesirable features have been eliminated. Sound engineering principles, modern streamlined design and precision construction combine to produce an entirely new comber that will be received with enthusiasm by all mills manufacturing quality combed yarns and by the textile trade in general.

Among the many innovations and improvements which distinguish the new Model "J" Comber are:

Increased Production — 150 Nips per minute. By the use of a new cam and gearing organization for operating the detaching rolls, an increase of 27% in speed of the combing cycle has been gained. On a long mill test, extending over a period of a year, this comber produced an average of 34 pounds per hour, together with a substantial reduction in neps.

Completely Enclosed Head and Foot Ends. Motor and fan for the aspirator, installed in head end, are free from dust and lint accumulation. Rounded off corners and wide swinging doors permit ease of cleaning, ready accessibility to every assembly, and reduction of accident hazards.

Bi-Coil Coiler. A 14" coiler can carried on a can table that receives a circular but non-rotating motion now takes two slivers instead of the usual one. Slivers are smoothly coiled, free from twist insertion, easily separated when being fed to the drawing frame. Reduces number of cans needed in drawing process by 50%.

Wider Draw Box. Width of draw box increased to 9½" insures better drafting of fibres.

You'll find the new Whitin Model "J" Comber a worthy addition to an already famous line of textile machines—a notable example of quality machinery built for long service and profitable performance.

A completely illustrated folder describing the new Model "J" Comber is now being prepared and will shortly be ready for distribution. Write for your copy today!

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA.

Beauty at the Crossroads

Upholstery material is Boltaflex, made by The Bolta Co., New York

. . . demonstrates many of the qualities produced by Geon polyvinyl resins

STEP into the Crossroads Restaurant at Miami Beach, Florida, and you'll be struck instantly by the beauty of the upholstery. The colors are clear and inviting, it has a smoothness and texture that means quality.

But to the Crossroads' owner, the upholstery material he has used is even more than beautiful. It is made from Geon polyvinyl resins and has many properties other than sheer looks. It resists scratching or scuffing, it won't mildew or become "tacky", it will take the weather as it finds it, and it will refuse to support a flame even should a careless customer drop a match on it. And wear! Upholstery material made from Geon resins will take both wear and age in stride, rewarding its user in actual dollars saved over a period of years.

We're telling you about this application of Geon polyvinyl resins because it may give you ideas. Upholstery is only *one* product that has been made better and more economical, longer lasting and more beautiful, thanks to Geon. Realize that Geon can be molded, extruded or used as an impregnant, can be firm or flexible *as you choose*. You call the characteristics you want!

We make no finished products from Geon or any of our other raw materials. However, we are always glad to supply information and to assist in any special problems. Write B. F. Goodrich Chemical Company, Dept. M-6, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

B. F. Goodrich Chemical Company

A DIVISION OF THE B. F. GOODRICH COMPANY

GEON polyvinyl materials • HYCAR American rubber • KRISTON thermosetting resins • GOOD-RITE chemicals

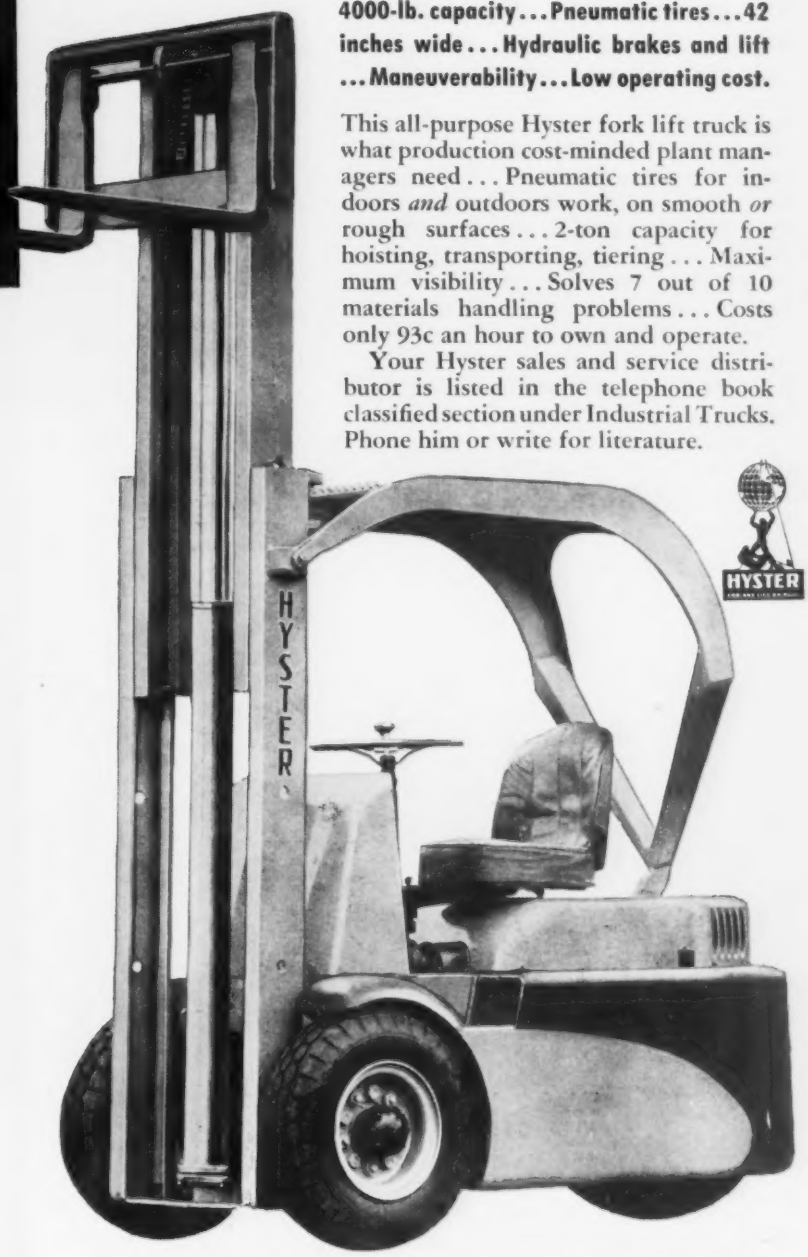
HYSTER "40"

CURRENT DELIVERY TO THE TEXTILE INDUSTRY

4000-lb. capacity... Pneumatic tires... 42 inches wide... Hydraulic brakes and lift ... Maneuverability... Low operating cost.

This all-purpose Hyster fork lift truck is what production cost-minded plant managers need... Pneumatic tires for indoors *and* outdoors work, on smooth *or* rough surfaces... 2-ton capacity for hoisting, transporting, tiering... Maximum visibility... Solves 7 out of 10 materials handling problems... Costs only 93c an hour to own and operate.

Your Hyster sales and service distributor is listed in the telephone book classified section under Industrial Trucks. Phone him or write for literature.



See all Hyster models at the NATIONAL MATERIALS HANDLING SHOW, Philadelphia Convention Hall, Jan. 10-14, 1949

GO TO YOUR HYSTER DISTRIBUTOR FOR CURRENT DELIVERY

ALASKA—Northern Commercial Co.
BIRMINGHAM, ALA.
S & T Equipment Co., Inc.
BROOKLYN, N. Y.—A. S. Rampell
BUFFALO, N. Y.—Rapids Handling Equipment Co. of Buffalo, Inc.
CALGARY, ALTA.
A. R. Williams Machy. Western, Ltd.
CHATTANOOGA, TENN.—Embry Brothers, Inc.
CHICAGO, ILL.—Hyster Company
CINCINNATI, O.—Oral T. Carter & Associates
CLEVELAND, O.—Morrison Company
DALLAS, TEX.—C. H. Collier Company
DENVER, COLO.—Paul Fitzgerald
DETROIT, MICH.—Bentley & Hyde
GRAND RAPIDS, MICH.—Bentley & Hyde
HALIFAX, NOVA SCOTIA
A. R. Williams Machy. Co., Ltd.
HONOLULU, T. H.—Electric Steel Foundry Co.
HOUSTON, TEXAS—C. H. Collier Company
INDIANAPOLIS, IND.
C. H. Ellis Co. Inc
JACKSONVILLE, FLA.
L. S. Teague Equipment Co.
KANSAS CITY, MO.
Industrial Power Equipment Co.
LOS ANGELES, CALIF.—Hyster Company
LOUISVILLE, KY.—Embry Brothers, Inc.
MEMPHIS, TENN.
Hyster Co. of Louisiana, Inc.
MILWAUKEE, WIS.—Hyster Company
MINNEAPOLIS, MINN.—W. S. Nott Company
MOBILE, ALA.—S & T Equipment Co., Inc.
MONTREAL, P. Q.
A. R. Williams Machy. Co., Ltd.
NASHVILLE, TENN.—Embry Brothers, Inc.
NEW ORLEANS, LA.
Hyster Company of Louisiana, Inc.
NEW ROCHELLE, N. Y.
Eastern Industrial Sales Co.
OTTAWA, ONT.
A. R. Williams Machy. Co., Ltd.
PHILADELPHIA, PA.—Rapids Handling Equipment Co. of Phila., Inc.
PHOENIX, ARIZ.—Equipment Sales Company
PITTSBURGH, PA.—Equipco Sales Company
PORTLAND, ORE.—Hyster Sales Company
RICHMOND, VA.—Richmond Auto Parts, Inc.
ROCHESTER, N.Y.—Rapids Handling Equipment Co. of Buffalo, Inc.
ST. JOHNS, N. F.—City Service Company, Ltd.
ST. LOUIS, MO.—Shipping Utilities
SALT LAKE CITY, UTAH
Arnold Machinery Company
SAN FRANCISCO, CALIF.—Hyster Company
SEATTLE, WASH.—Hyster Company
TORONTO, ONT.
A. R. Williams Machy. Co., Ltd.
VANCOUVER, B.C.
A. R. Williams Machy. Western, Ltd.
VICTORIA, B.C.
A. R. Williams Machy. Western, Ltd.
WINNIPEG, MAN.
A. R. Williams Machy. Western, Ltd.
YUKON TERRITORY
Northern Commercial Company

HYSTER COMPANY

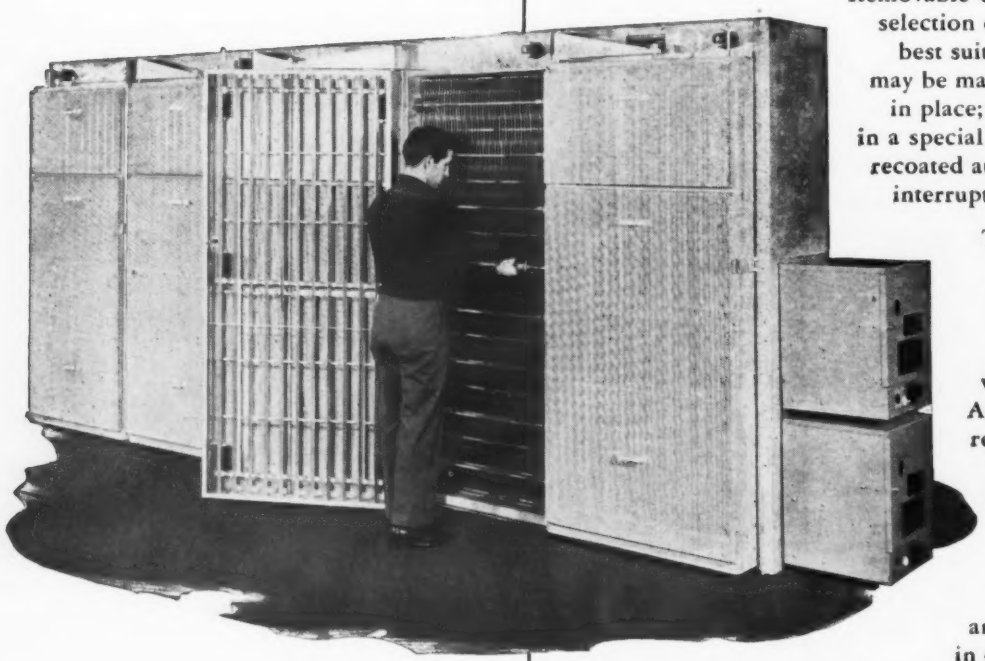
THREE FACTORIES

2922 N. E. CLACKAMAS ST... PORTLAND 8, OREGON
1822 NORTH ADAMS STREET... PEORIA 1, ILLINOIS
1022 MEYERS STREET... DANVILLE, ILLINOIS

Super-Clean Air with Simplified Maintenance

ELECTRO-CELL KEEPS DUST AND SMOKE OUT AND OPERATING COSTS DOWN

YOU get super-clean air at a saving with the installation of an AAF Electro-Cell. This modern electronic precipitator gives positive protection against dust and soot—even down to such fractional micron sizes that its true efficiency can only be evaluated by the Discoloration Method of testing.



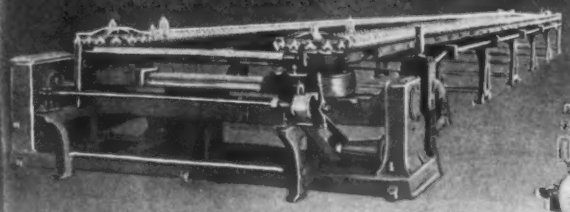
Removable collector plate cells permit selection of the maintenance method best suited to your operation. Cells may be manually washed and re-oiled in place; removed for easy cleaning in a special tank, or washed, dried and recoated automatically with minimum interruption to operation.

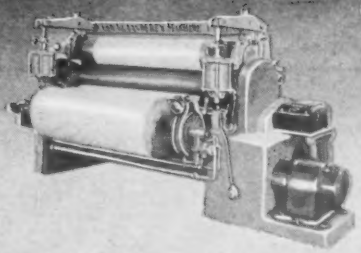
The Electro-Cell's sectional construction reduces weight of parts, eliminates multiplicity of electrical connections, protects wiring from dirt and water. And its full-height hinged or removable ionizers minimize electrical losses, reduce ozone and simplify replacement of ionizing wires.

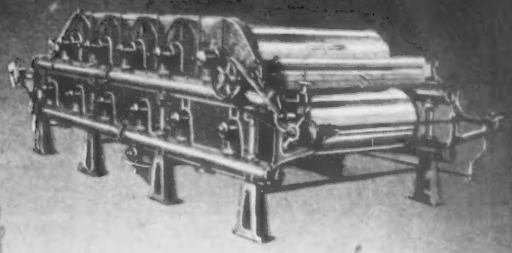
If you want positive protection against soot and dust plus proven savings in operation and maintenance, get complete Electro-Cell data now. Just contact your local AAF representative or write direct for Bulletin No. 252.

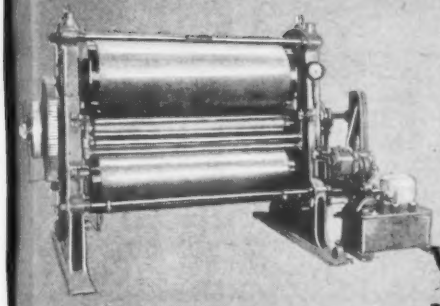
AMERICAN AIR FILTER COMPANY, INC.
304 Central Avenue, Louisville 8, Ky.
In Canada: Darling Bros., Ltd., Montreal, P. Q.

®AAF
AIR FILTERS
AND DUST CONTROL EQUIPMENT

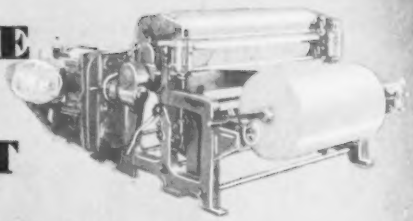




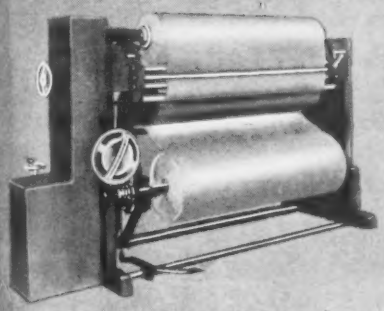


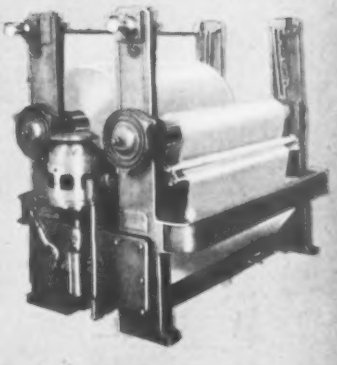


A SINGLE MACHINE OR AN ENTIRE PLANT



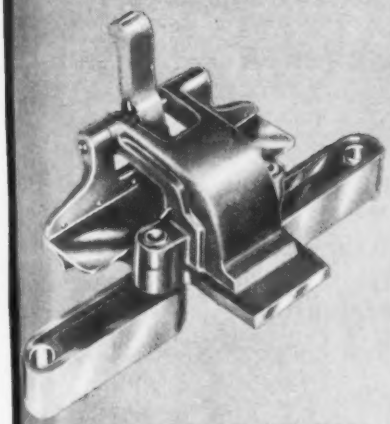
Van Vlaanderen engineers are prepared to help you design a complete dyeing and finishing plant—or will help you select a single machine to meet a special need.





The Van Vlaanderen equipment you buy now will be better too—giving greater production and higher quality in processing modern fabrics.

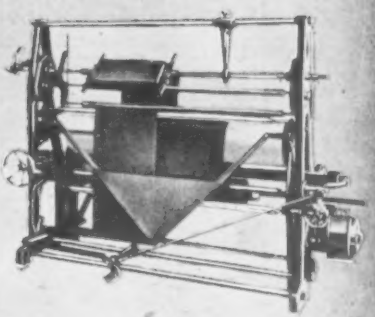
Discuss your requirements with us.

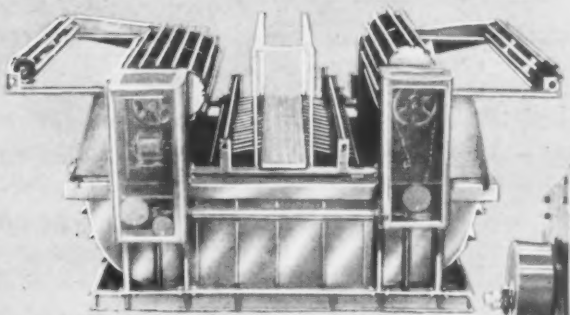


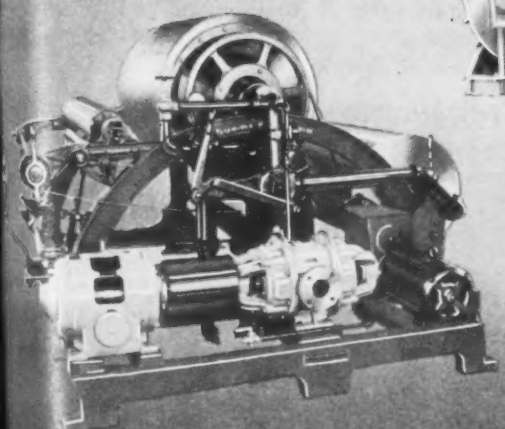
VAN VLAANDEREN MACHINE COMPANY

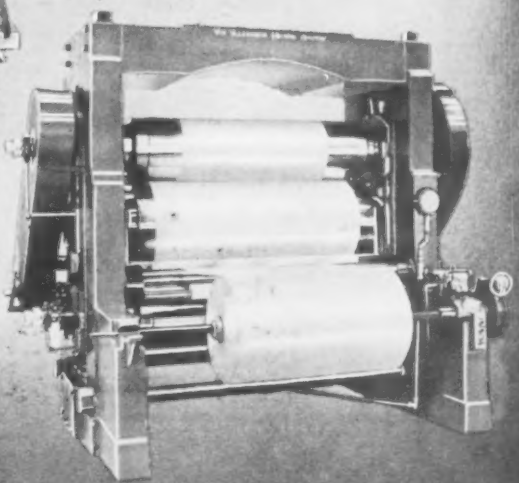
370 Straight Street, Paterson 3, New Jersey

Worlds largest manufacturer of machines for processing modern fabrics

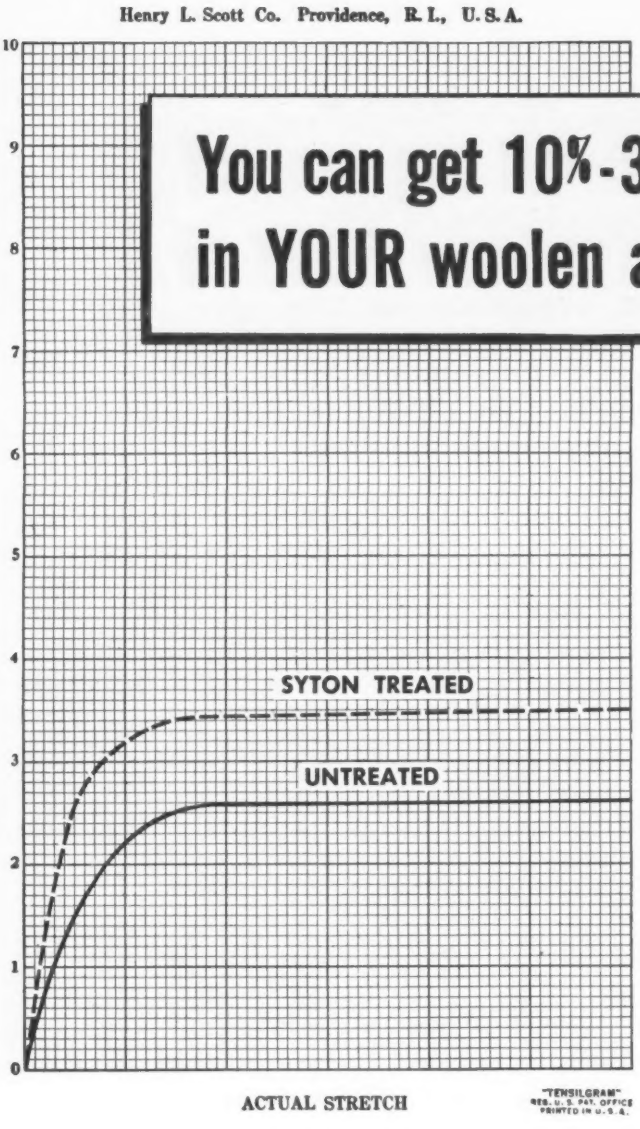








FOR YOUR INFOR[M]ATION



You can get 10%-30% more yarn strength in YOUR woolen and worsted spinning

You can *measure* the results of Syton* in a laboratory and show increased yarn strength up to 30%. But an even *better* measurement is Syton's performance in the field. More and more mills are using this Monsanto-developed product. They're getting performance that's paying off for them. Performance that will pay off for you. Just check the coupon at 1 to get full information or technical help at your plant. And, meantime, look at the advantages that stem from added yarn strength.

FASTER PRODUCTION: Because of increased yarn strength, the amount of twist can be reduced and production thereby speeded.

LOFTIER YARNS: Less twist means loftier yarns, with tensile strength equal or better than the strength of untreated yarns of higher twist.

FINER YARNS WITH ALL GRADES: Higher counts—closer to limit spin—for most grades of stock can be attained with Syton-treated yarns.

FEWER ENDS DOWN: Reductions in ends down vary from 25% to 50% depending on the grade of wool.

BETTER SPINNING EFFICIENCY: Syton produces more uniform yarn with less beard and thin spots, reduced fly waste, and better drafting.

STYMER

STOPS static electricity troubles in acetate weaving

Just *one* of Stymer's* many advantages: Elimination of static electricity so troublesome during acetate weaving! Monsanto's Stymer has a high conductivity . . . at least 400 times that of gelatine or starch! The Stymer film is exceptionally strong, smooth, flexible and abrasion resistant. Actual mill experience has already proved the tremendous, practical success of this new invention of Monsanto research.

THINK OF ALL THESE ADVANTAGES IN *YOUR* MILL:

1	**FILM IS** exceptionally strong, tough, abrasion resistant, smooth and flexible.	3	**ADHERES** well to the fiber.
2	**EASILY APPLIED** in a uniform coating on the individual yarn.	4	**EASY TO SCOUR** from the woven fabric in warm water containing a detergent.
		5	**REDUCES STATIC.**

IN SLASHING, Stymer does not stick to uncovered dry cans, stops static electricity, separates easily at the lease rods and does not gel in the pipes or size box.

IN WEAVING, the Stymer-sized warps exhibit little or no shedding, maintain yarn twist, have fewer end breaks and produce a more uniform fabric.

And . . . last but certainly not least . . . Stymer's in a competitive cost range with other acetate sizes! Just check the coupon at 2 for more information.

*Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS AND PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

MONSANTO CHEMICAL COMPANY, TEXTILE CHEMICALS DEPARTMENT
Desk No. TWT-12, 140 Federal Street, Boston 10, Mass.

Please send me information on the following subjects as covered in your advertisement. ☐ *1,* ☐ *2.*

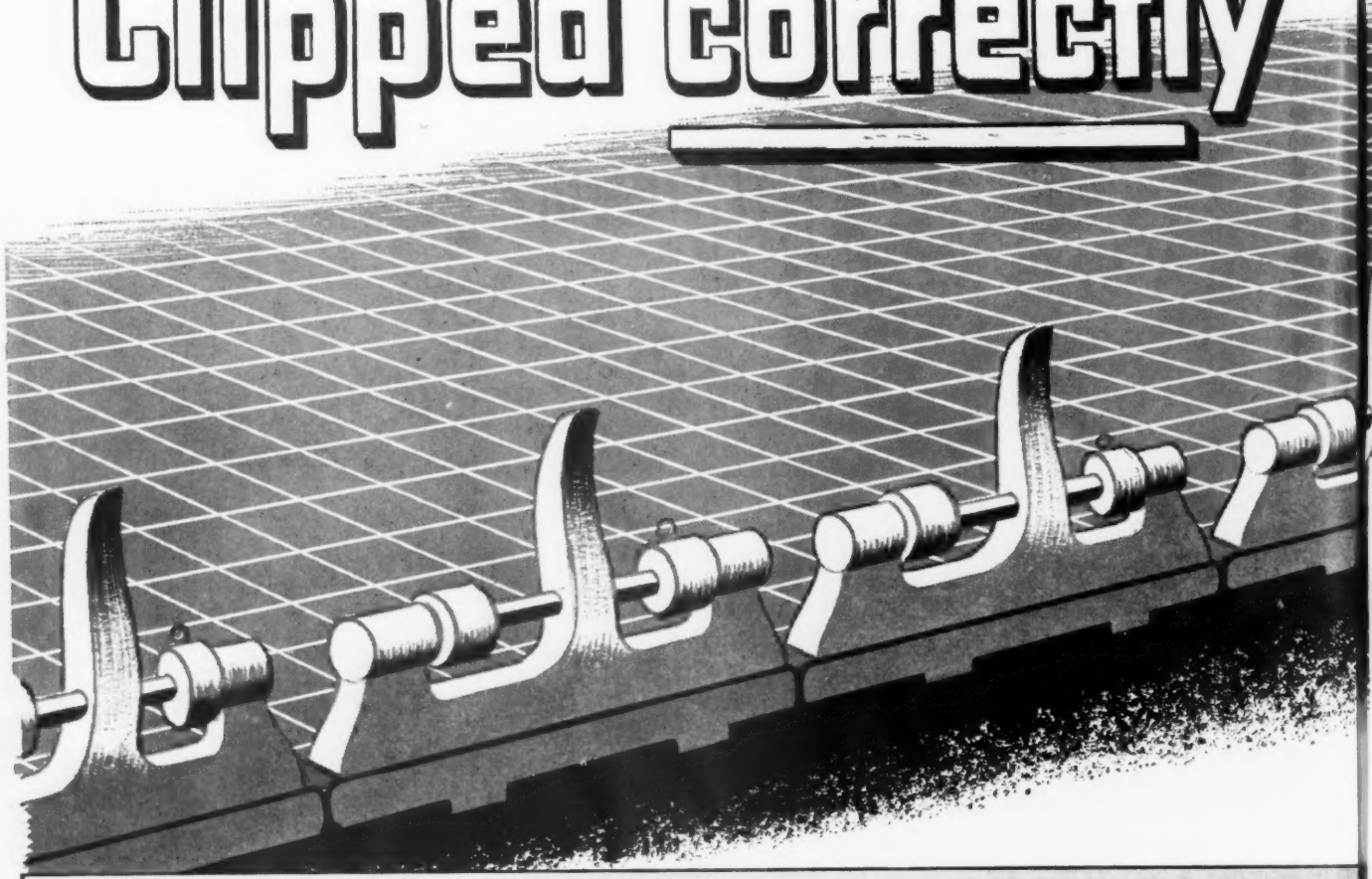
Name _____ Title _____

Company _____

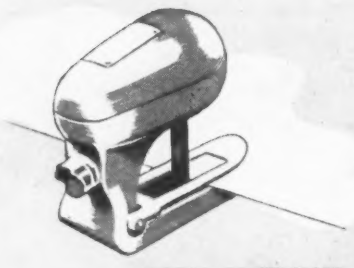
Address _____

City _____ State _____

Clipped correctly

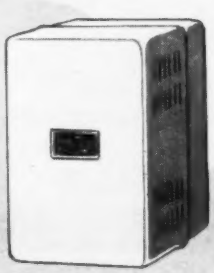


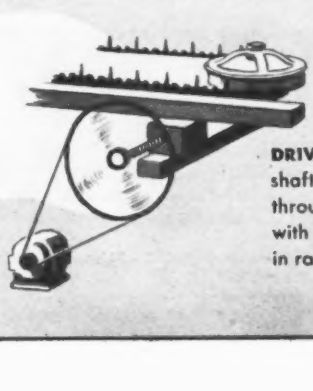
HOW A G-E TENTER-RAIL GUIDER OPERATES



FEELER SWITCH—Just before the cloth enters the tenter, its selvage comes in contact with the blade of a highly sensitive feeler switch, one on each side of the cloth. The instant this blade detects any irregularity in the selvage, it actuates a motor controller.

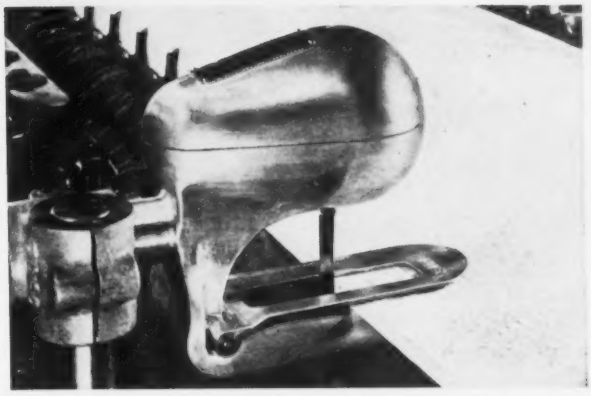
MOTOR CONTROLLER—This unit consists of two sturdy reversing motor controls, each connected to a feeler switch. These controls are capable of quickly starting and stopping a fractional-horsepower motor.





DRIVE MOTOR—Each swinging rail is mounted on a screw shaft which is coupled to a fractional-horsepower motor through a speed-reducing drive. These motors operate with a staccato action to give the continuous adjustments in rail position called for.

G-E Guiders automatically assure correct placing of tenter clips through proper positioning of each rail. Spoilage is reduced, tentering is speeded up.



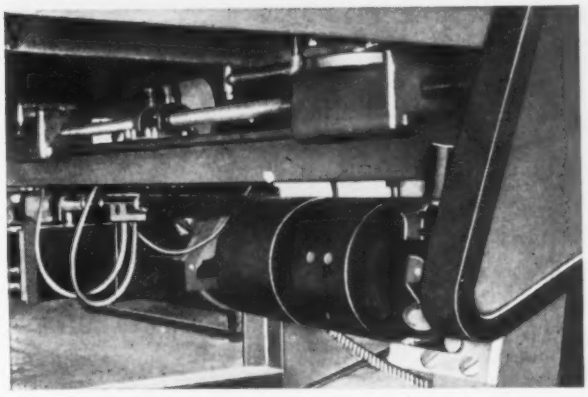
Feeler switch in a G-E Guider follows cloth selvage continuously

TO eliminate a prime cause of spoilage and re-runs, General Electric suggests you investigate its practical Tenter-Rail Guider. By automatically positioning tenter rails so that *every* clip has an opportunity to grip the cloth correctly, it assures uniform tentering, greater operating speed, and a reduced spoilage loss.

For, if even a few of the clips in your tenter are missing the cloth selvage entirely or gripping it in the wrong place, you're paying more for tentering than you should.

The equipment is simple and relatively inexpensive. It swings the rails quickly and positions them accurately, makes manual adjustments by the operator unnecessary. Evenly stretched cloth, ready for subsequent finishing operations, leaves the tenter at a high rate of speed.

For more detailed information on G-E Tenter-Rail Guiders, contact your nearest G-E office or write for Bulletin GEA-5214. *Apparatus Dept., General Electric Co., Schenectady 5, N. Y.*



G-E motors position tenter rails correctly, quickly

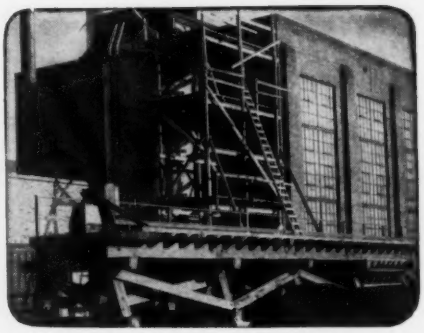
GENERAL ELECTRIC

661-30

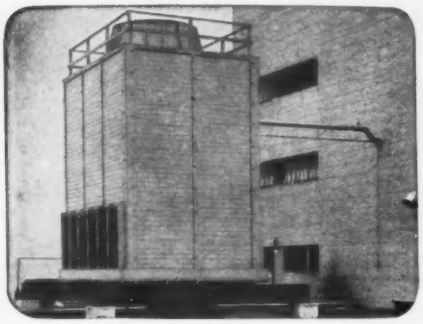
DRIVE SYSTEMS FOR TEXTILE MILLS

6 common conditions where *WOLMANIZED PRESSURE TREATED LUMBER protects against DECAY and TERMITES

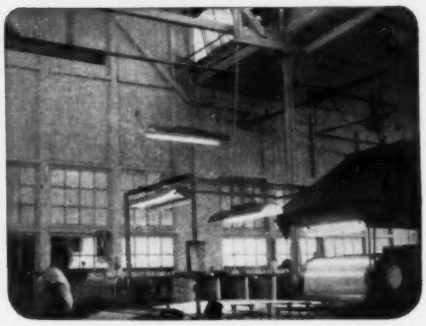
1. Wherever moisture is condensed because of concrete or masonry.



2. Ground moisture and rain held in joints, etc., of outdoor structures.

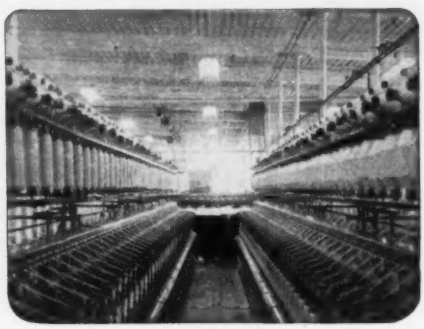


3. Cooling towers and similar structures exposed to direct water contact.



4. Where steam and vapor from industrial processes are prevalent.

5. Wood used in or near the ground open to attack by termites.



6. Wood exposed to moisture in artificially humidified buildings.

This Treatment COSTS LESS Than "Replacement-Labor"

Actual service records, available to you, show that "Wolmanized" lumber outlasts ordinary wood by as much as 3 to 5 times.

That's because it is pressure-treated with special chemical salts to give lasting protection against wood-decay and termites.

And the extra cost of using Wolmanized lumber in the first place is actually less than the cost of replacement labor alone, on wood which has failed prematurely.

Here is a true economy which will reduce your maintenance costs and give you sounder buildings. It offers you particular savings under conditions such as those shown above where wood is subjected to moisture and ground exposure—ideal conditions for decay and termites.

Wolmanized lumber is clean, odorless, paintable and non-corrosive to metals.

For complete information and copies of actual performance records, write today to American Lumber & Treating Company.

The latest information on WOLMANIZED pressure-treated LUMBER

Learn more about this money saving pressure treated lumber. Get all the facts and figures on how Wolmanized pressure treated lumber resists decay and termites.

Write today for this new booklet.

WOLMANIZED
Reg. U.S. Pat. Off.

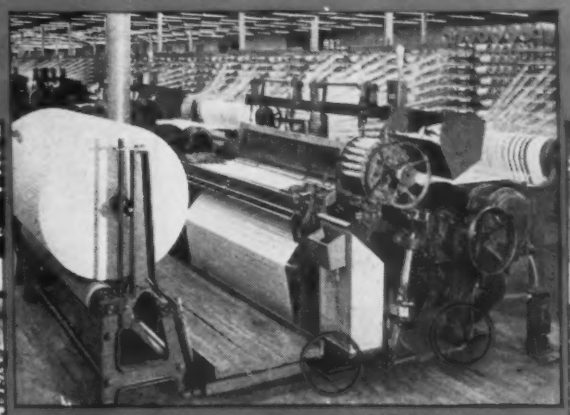
*Registered Trade Mark

AMERICAN LUMBER & TREATING COMPANY

General Offices: 332 South Michigan Ave., Chicago 4, Illinois

Boston 9, Mass. 141 Milk Street | New York 17, N. Y. 420 Lexington Ave. | Philadelphia 9, Pa. 123 South Broad St. | Washington 5, D.C. 831 Southern Bldg. | Baltimore 3, Md. P. O. Box 1561 | Jacksonville 2, Fla. 719 Graham Bldg. | Los Angeles 15, Calif. 112 West 9th Street | San Francisco 5, Calif. 604 Mission Street | Portland 5, Oregon 1220 S.W. Morrison St

EXCELSIOR MILLS



TOP — Draper Special XP Loom
BOTTOM — Whitin Twister

mounts Looms, Twisters and other Machinery on

UNISORB

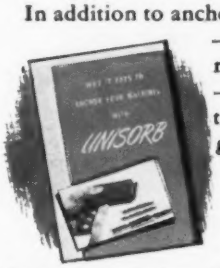
without BOLTS or LAG SCREWS

Deering, Milliken's modern, efficient Excelsior Mills at Clemson, S. C., are one of the nation's important makers of rayon tire cord.

In keeping with this manufacturer's alert, up-to-date methods, twisters, looms and other machinery are anchored in the *modern way* — on UNISORB . . . result: no bolts, no screws, *no damage to floors.*

UNISORB anchoring is quick, easy, inexpensive. A special cement binds the UNISORB to the machine feet and the floor — permanent set absolutely prevents any riding.

In addition to anchoring machines to the floor, UNISORB — correctly installed in accord with recommendations of Felters Engineers — will absorb from 60% to 85% of transmitted vibration and noise. By guarding against excessive vibration, UNISORB materially reduces shutdown hours, saves on machinery and building wear and repair. By providing quieter surroundings, it increases efficiency — helps toward greater production.



Send for sample and complete specifications. Ask for your copy of "Why it Pays to Anchor Your Machines with UNISORB."

LOOK FOR THE RED CENTER AND UNISORB BRAND MARK

THE FELTERS COMPANY

210-W SOUTH STREET, BOSTON 11, MASSACHUSETTS

Offices: New York, Philadelphia, Chicago, Detroit
Sales Representatives: San Francisco, St. Louis
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Southwest Representative: Textile Supply Co., Dallas, Texas
Mills: Johnson City, New York; Millbury, Mass.; Jackson, Mich.

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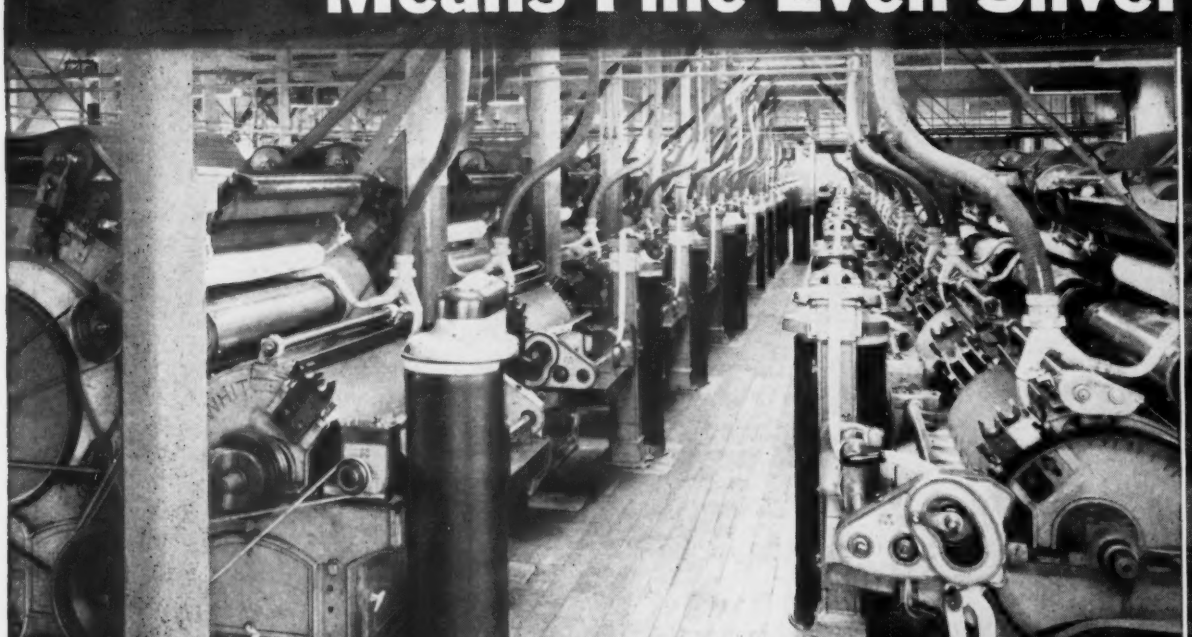
TUFFER Card Clothing Means Fine Even Sliver



YES, fine even sliver comes off each card that's clothed with Tuffer Card Clothing.

The Tufferizing Process—developed and exclusively owned and used by Howard Bros.—cuts and forms wires with an accuracy never before obtained in the making of card clothing. The wires are precision-formed and placed accurately and uniformly in the famous Tuffer Foundation. When drawn on the cylinder they fit snugly—sides perfectly parallel—every point in place.

These outstanding features of Tuffer Card Clothing give you proper carding—carding that means greater production of quality material. And you'll find, too, that the efficient, economical performance of Tuffer Card Clothing helps production in every department.

Let a Howard Bros. representative inspect your clothing. He will work with you in improving the quality of your carding, and will make practical recommendations that will mean better material at lower costs.

HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS

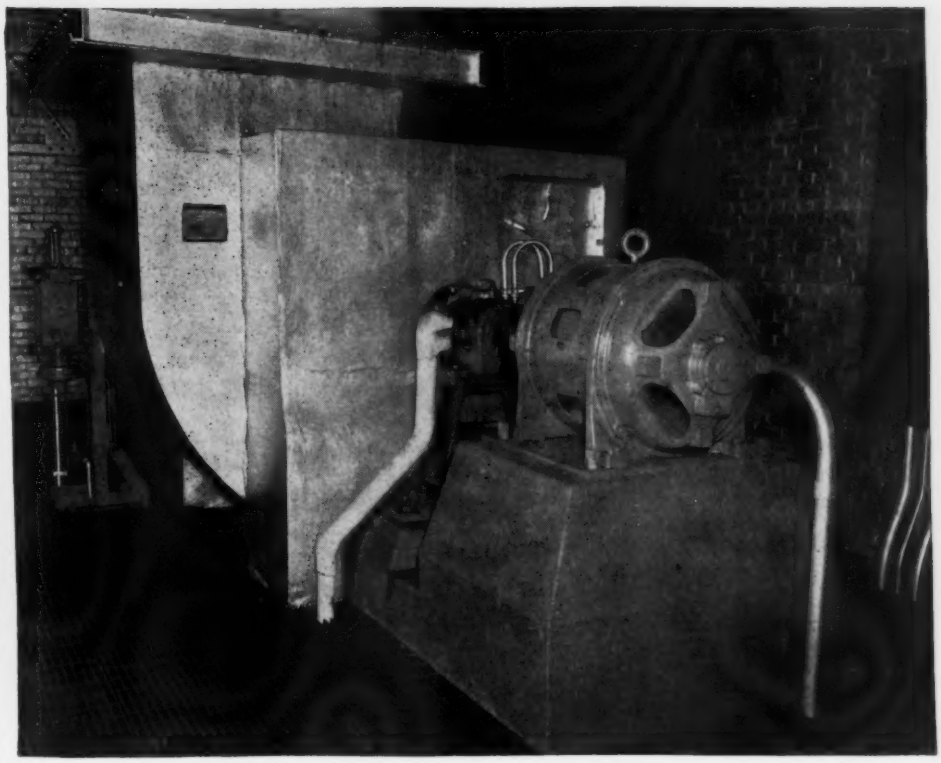
Southern Plants: Atlanta, Ga. and Gastonia, N. C.

Branches: Philadelphia, Pa. and Blanco, Texas *Direct Representation in Canada* A-4

TUFFER CARD CLOTHING ***IMPROVES PRODUCTION ALL ALONG THE LINE***

AIR EQUIPMENT TO HELP YOUR BUSINESS

Taking the "DRAFT MARATHON" *in stride*



FANS by "Buffalo"

EQUIPMENT FOR

- ★ VENTILATING
- ★ HEATING
- ★ COMFORT COOLING
- ★ PROCESS COOLING
- ★ AIR TEMPERING
- ★ AIR WASHING
- ★ EXHAUSTING
- ★ BLOWING
- ★ FORCED DRAFT
- ★ INDUCED DRAFT
- ★ PRESSURE BLOWING
- ★ CLEANING
- ★ DRYING

—where "Buffalo" fans save money

As every engineer knows, the boiler room is no place for a "weak sister" fan! That's why you make long-run savings when you specify "Buffalo" Forced and Induced Draft Fans—they're "scientifically husky"—built up in the right places to stand the grind.

The "Buffalo" Induced Draft Fan above is "taking it" on a 24-hour schedule in a well-known auto plant—as are similar fans in power plants all over the country.

We'd like you to see just *how much* endurance and efficiency are built into "Buffalo" Forced and Induced Draft Fans—and how this saves you trouble and money. *Write us for bulletins on your draft problem!*

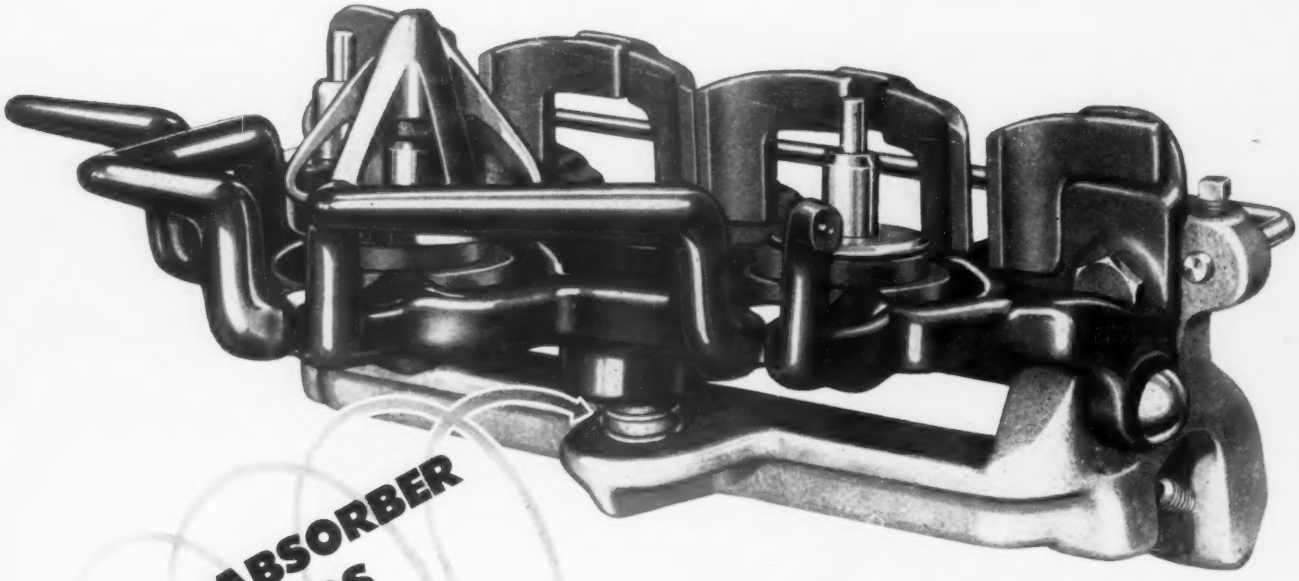
Some outstanding users of "Buffalo" air equipment include:

Kingsboro Silk Mills
Larkwood Hosiery
Liberty Hosiery
Mid State Cloth
Morganton Full Fashioned
Roanoke Weaving
Seminole Mills
Shenandoah Hosiery
Southerns Silk
Tape Craft
Trion

BUFFALO FORGE COMPANY

184 Mortimer Street Buffalo, New York
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Branch Offices in all Principal Cities

CUTTING AIR COSTS IN EVERY BRANCH OF INDUSTRY



SHOCK-ABSORBER SPRINGS

added insurance for even tension with Foster Model 57 Doublers

No development in winding machinery design is too small to be included in Foster's program for better yarn by better winding. The shock absorbing spring shown here on the combination tension and slub catching device now used on Foster Model 57 Doublers is typical of this program.

A small thing in itself, it contributes to your efforts to produce better yarn by assuring even tension at all times. When floor vibrations or frame shocks might otherwise cause tension washers to jump, this spring absorbs the vibrations or shocks before they reach the tensions. This means even tension always and better yarn.

The Foster Model 57 Doubler can be equipped for one process doubling (with slub catchers), drawing direct from bobbins, or for two process doubling, drawing from cones which have been wound and inspected on the Foster Model 102. It can be built to wind either 6" or 7" traverse tubes, and exceptionally high speeds are possible without loss of quality.

Here are other Foster features which contribute to superior Model 57 Doubling:

NO SHARP BENDS IN THREAD LINE. Minimum yarn strain.

NO JUMPING OFF DOUBLING ROLL. Guard on thread roll.

QUICK-ACTING STOP MOTION. Enough yarn left for single end piecing.

EFFICIENT BRAKE. Contacts whole tube from underneath.

INDIVIDUAL SLUB CATCHER SETTINGS IF DESIRED. Permits doubling of coarse and fine yarns side by side.

Machine Arranged for one Process Doubling

CIRCULAR A-90 ON REQUEST

FOSTER MACHINE CO., Westfield, Mass., U. S. A.

SOUTHERN OFFICE — JOHNSTON BUILDING, CHARLOTTE, N. C.

CANADIAN REPRESENTATIVE — ROSS WHITEHEAD & COMPANY, LIMITED, UNIVERSITY TOWER BUILDING, 660 STE. CATHERINE STREET WEST, MONTREAL, QUEBEC

EUROPEAN REPRESENTATIVE — MUSCHAMP & TAYLOR, LIMITED, MANCHESTER, ENGLAND

SUMMER'S SOFT HARMONIES WILL ECHO NEW AND COLORFUL FASHIONS

Get the Needed Dyestuffs for All Popular Shades from Our Nearby Warehouse Stocks of

National Aniline Dyes

NATIONAL ANILINE DIVISION • **ALLIED CHEMICAL & DYE CORPORATION**

40 RECTOR STREET, NEW YORK 6, N.Y.

BOSTON • PROVIDENCE • PHILADELPHIA • CHICAGO • SAN FRANCISCO • PORTLAND, ORE.
GREENSBORO • CHARLOTTE • ATLANTA • NEW ORLEANS • CHATTANOOGA • TORONTO

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

FACTORS

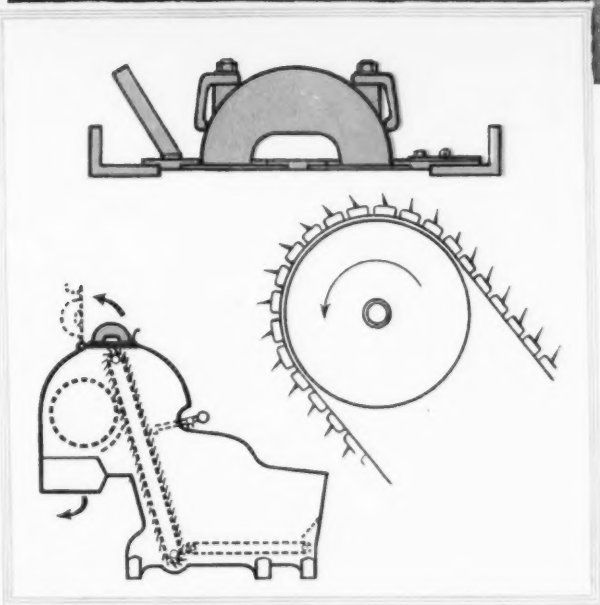
For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

Eriez Magnets give more efficient and simplified MAGNETIC PROTECTION



1. Supporting angle iron.
2. Magnetic Separator in working position.
3. Magnetic Separator swung up for cleaning.
4. Handle for swinging back hinged Magnetic Separator.

The Eriez Magnetic Separator, shown above, is built for suspension over spiked apron feeders. This application assures superior cleaning results because the magnet is operating at a point where materials are opened and traveling at low speeds. Eriez Magnetic separation is simple. As material is conveyed to the top of the apron, it passes into the magnetic field where tramp iron is removed. Eriez magnets can be built any size required in order to fit existing or new machinery.

See our exhibit, Southern Textile Exposition, Greenville, South Carolina, October 4-9, 1948, Booth No. 487.

POSITIVE protection from fires and machinery damage caused by tramp iron is provided when Eriez non-electric permanent magnetic separators are installed in textile processing lines. The Eriez magnet is simple, requires no maintenance other than cleaning of collected trash. It is easily understood, maintained and installed by ordinary labor. There is no operating cost . . . The Eriez is light in weight, extremely flexible in design and economical in cost. It presents no additional fire hazard of its own to the process protected. The magnetic strength of Eriez Magnets does not diminish. It is permanent—the power is always there. No chance of electrical failure or human forgetfulness. Eriez Non-Electric Permanent Magnets are effective in removing Tramp Iron from all types of fibers. Submit your tramp iron removal problems to us, we will be glad to help in their solution.

TW12

Please send bulletin No. 104A and the following:

Data on Eriez Magnets for:

☐ Wool ☐ Cotton ☐ Worsted ☐ Other processing lines

Eriez data on: ☐ Gravity Conveyor ☐ Mechanical Conveyor

☐ Pneumatic Conveyor ☐ Equipment on Processing Machines

Name.....

Address.....City.....State.....

● *When It's Magnetic Protection . . . See Eriez First*

ERIEZ MANUFACTURING COMPANY

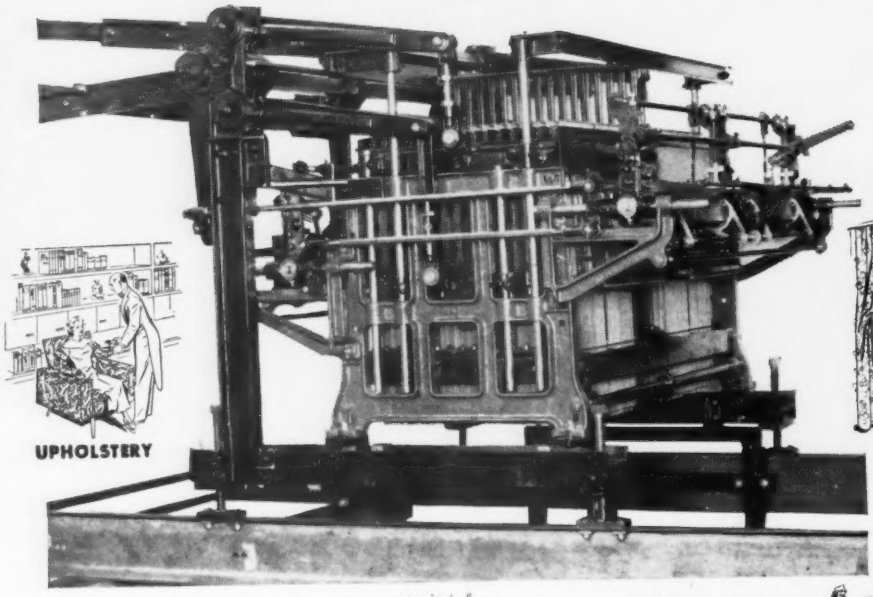
501 East 12th St., Erie, Pa.

World's Foremost Creator of Glamorous Fabrics . . .

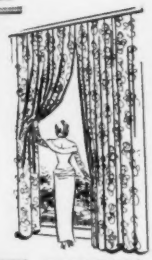
Crompton & Knowles

***NEW* HIGH-SPEED**

JACQUARD



UPHOLSTERY



DRAPERIES

DRESS GOODS & LININGS

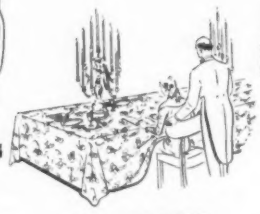


TABLE DAMASK

BLANKETS

TOWELS

BED SPREADS

GORGEOUS, INTRICATE FABRICS . . . woven at higher speeds than ever before . . . with far lower maintenance and fewer loom-stops . . . that's what you get when you put C&K's new 2608-hook, high-speed jacquard *over any make of loom.* And it will keep pace with the *fastest.*

This modern, double-cylinder jacquard . . . with independent cylinder drive . . . is an exclusive Crompton & Knowles design that pays back its cost with amazing rapidity over old-style single-cylinder machines.

Yet, if you wish, this new C&K Jacquard can be operated at slow speeds . . . with the same remarkable freedom from maintenance . . . to the point where, once running, the machine can practically be forgotten. Operation is smooth and even, day after day. And designs are unrestricted, for you can use this same C&K Jacquard in *any* fabric construction.

Show this page to the top jacquard man in your mill, and suggest that he send for full information on this—*and on all other*— new Crompton & Knowles Jacquards.

Crompton & Knowles Jacquard & Supply Co.

PAWTUCKET, RHODE ISLAND, U. S. A.

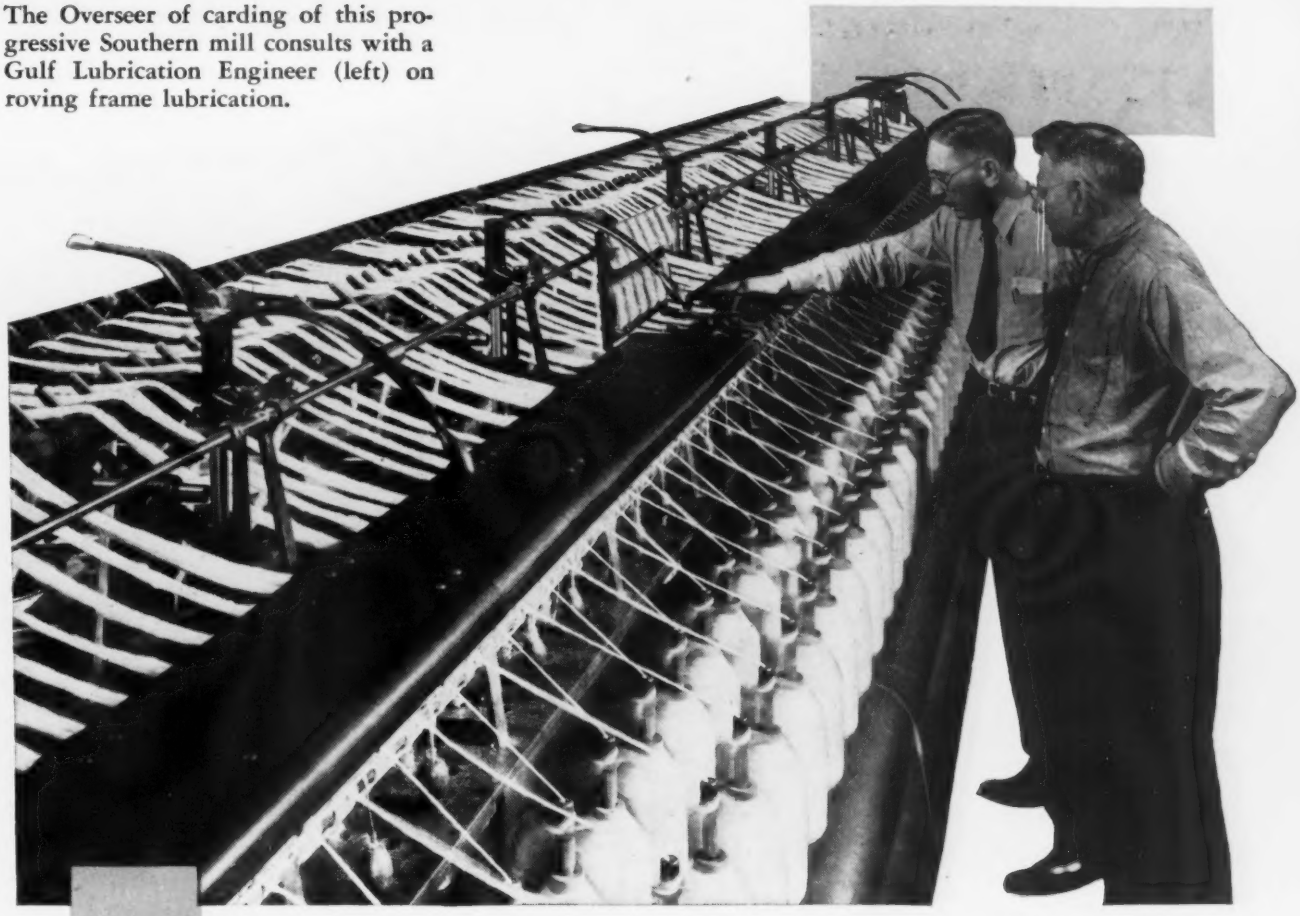
Subsidiary of CROMPTON & KNOWLES LOOM WORKS, Worcester 1, Massachusetts

PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.

C&K — A Loom for every Woven Fabric

This "Invisible Trademark" Stands Behind the Trademarks of Many of the World's Most Famous Jacquard Fabrics

The Overseer of carding of this progressive Southern mill consults with a Gulf Lubrication Engineer (left) on roving frame lubrication.



Let a GULF LUBRICATION ENGINEER *work with you, for you*

to produce more poundage of good roving · reduce maintenance costs

SCORES OF LEADING MILLS find the wide experience and broad practical knowledge of Gulf Lubrication Engineers invaluable—a source of real down-to-earth solutions for their maintenance and lubrication problems.

One of these trained specialists can help you eliminate guesswork in lubrication—assist you to get the full advantage of lubricants as engineering materials. For he is thoroughly familiar with all factors which affect lubrication efficiency—and he makes available a complete line of quality oils and greases designed for service under widely varying operating conditions, no matter how severe.

When he makes a recommendation of the right Gulf lubricant and the most suitable method of application, you can be sure of satisfactory results.

If you are not already doing so, get the benefits of this helpful engineering service. Call in a Gulf Lubrication Engineer today and ask him to give you specific cases of mills, similar to yours, who have reduced power and maintenance costs through improved lubrication. Write, wire, or phone your nearest Gulf office.

Gulf Oil Corporation · Gulf Refining Company

Division Sales Offices:
Boston · New York · Philadelphia · Pittsburgh · Atlanta
New Orleans · Houston · Louisville · Toledo

GULF INDUSTRIAL LUBRICATION

Are they "Pulling the Wool Over Your Eyes?"

The answer is "yes," figuratively speaking, if you think that you're getting maximum production and quality from your cards just because they're operating. Hidden production losses from defective or unsuitable clothing, wrong settings, or other faulty adjustments can run as high as 30% — to say nothing of loss in quality.

We know because woolen mills have *improved* quantity and quality to this extent, after our trained experts have inspected their cards and after they have followed our recommendations.

Your employees seldom have time to properly inspect cards. Our experts have. It's their business. An Ashworth inspection will cost you nothing and it may save you thousands of dollars.

Write us at Fall River for details.

PRODUCTS AND SERVICES

Card Clothing For Cotton, Wool, Worsted, Silk, Rayon And Asbestos Cards And For All Types Of Napping Machinery · Brusher Clothing And Card Clothing For Special Purposes · Lickerin Wire And Garnet Wire · Sole Distributors For Platt's Metallic Wire · Lickerins And Top Flats Reclothed

Ashworth PIONEERS IN CARD CLOTHING

ASHWORTH BROS., INC.
AMERICAN CARD CLOTHING CO. (Woolen Div.)
Fall River*†‡ Worcester*‡ Philadelphia*†‡
Atlanta†‡ Greenville†‡* Charlotte†‡
Dallas†‡ (Textile Supply Co.)
*Factory †Repair Shop ‡Distributing Point

4 FACTORIES · · · 6 REPAIR SHOPS · · · 7 DISTRIBUTING POINTS

ANY WOOL PRODUCT...

BECOMES A BETTER WOOL PRODUCT

WHEN IT'S *Schollerized*

WASHABLE WOOL

SAFE TO TUB • SAFE TO RUB

- **No foreign material is added to the wool . . . its weight remains unchanged.**
- **Felting is eliminated.**
- **Shrink-resisting qualities last for the life of the garment. Made to size, it will stay to size.**
- **Appearance is unaffected while comfort and useful life of the processed garment is greatly enhanced.**
- **Washing is easier . . . dirt just rolls out because felt dirt-pockets are eliminated. Fast colors retain a bright, new appearance.**
- **Resiliency, elasticity, softness, texture, feel or "hand" are completely retained or enhanced.**
- **The strength of the original fibre is usually increased.**

Write Today For Full Details On The Amazing Scholler Wool Shrinkage-Control Process applied to YOUR product!

. . . yes, *any* wool product becomes a *better* wool product when it's SCHOLLERIZED! That's because the Scholler Process allows the wool to retain all of its natural qualities yet prevents the shrinkage from matting and felting which so often makes a wool garment useless after several washings. The shrink-resistant qualities of Schollerized Wool assure life-of-the-fabric comfort. *U. S. AND FOREIGN PATENTS PENDING

Made to size, it will always stay to size—if it's SCHOLLERIZED!

SCHOLLER BROTHERS, INC.

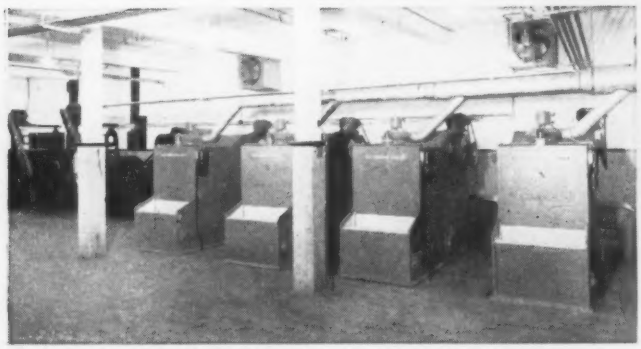
Manufacturers of Scouring, Dyeing and Finishing Materials

COLLINS at WESTMORELAND, PHILADELPHIA 34, PA.

IN CANADA: SCHOLLER BROTHERS, LTD., ST. CATHARINES, ONTARIO

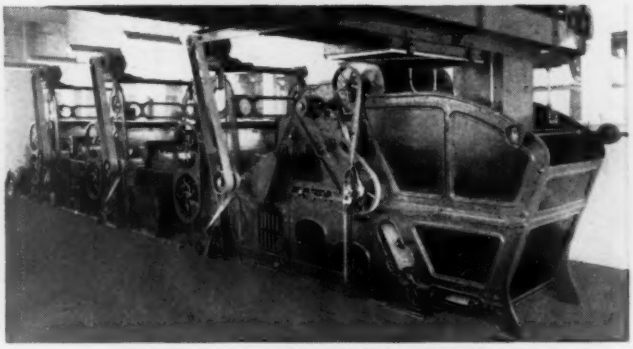
SERVING THE TEXTILE INDUSTRY FOR MORE THAN FORTY YEARS

Dead end



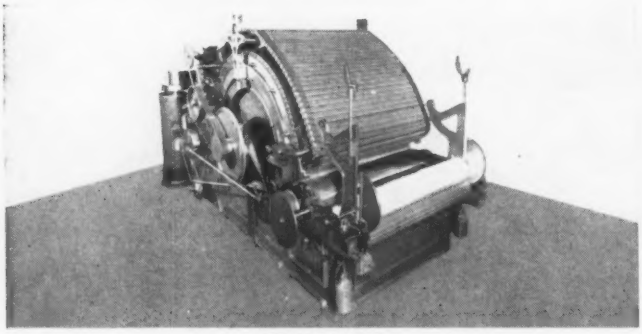
H & B OPENING, BLENDING & CLEANING EQUIPMENT

- Installation above includes blending feeders, waste feeders, hopper bale openers, 30″ tandem opening and cleaning units and cleaning trunkings.
- Controlled by electrical and mechanical timing devices.
- Ample floor space behind blending feeders allows continuous blend of from 30 to 50 bales.
- Supplies right amount of raw stock (thoroughly opened and cleaned) at all times to H & B A-1 One Process Pickers.
- Furnished in single, double, or triple units (tandem operation recommended).



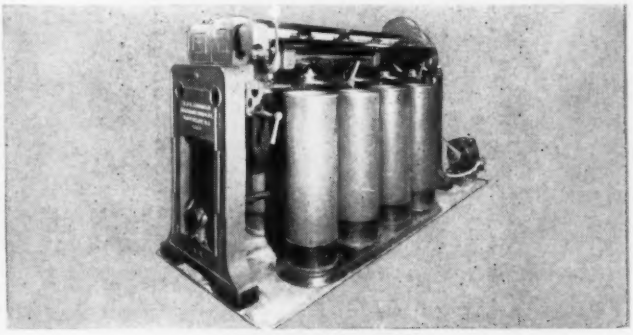
H & B A-1 ONE PROCESS PICKER

- Greatly reduces operating costs as compared with two or three process pickers.
- More even laps. Even where lap tolerances are very close, rejections are seldom more than 5 laps per 1,000.
- Continuous process, without interruption or handling, from Opener Section to Finisher Section.
- Double evener motion which slows down or speeds up cages and calender as lap requires.
- Synchronized electric control switch governs flow of cotton from opening room to picker lines.



H & B REVOLVING FLAT CARD

- Settings controllable to .001 inch at 5 points.
- Settings locked with key. Unauthorized changes prevented.
- Bends and flats can be kept concentric with cylinder at every point throughout life of clothing.
- Phosphor bronze cylinder bearings. Pedestals last the life of card and are vertically or horizontally adjustable. Thus, concentricity of cylinder with bends can be maintained as bearings wear.
- Convenient foot treadle actuates drop lever.



H & B DRAW FRAME

- Insures even drafting and positive fiber control.
- Streamlined to minimize accumulation of fly.
- Gears machine cut and finished—smooth running.
- Fine pitch tension gears permit accurate changes.
- Calender rolls and bottom rolls precision ground.
- Mechanical or electric stop motions—instantaneous.
- Draft gearing and trumpets easily changed.
- Leather covered or fluted metallic top rolls.
- H & B or ERMEN top clearers, as specified.

H&B AMERICAN

FACTORY, EXECUTIVE OFFICES AND EXPORT

street?

For some time, textile manufacturers have had the twin problems of high cost of materials and high cost of labor. Justified or not, they are facts which will not change in the foreseeable future.

Now these same manufacturers are also faced in many instances with a third problem,—PRICE RESISTANCE (customers and the public refuse to buy, or buy less than before because of price). Does this situation represent a "dead end street", or is the problem one that can be solved?

There IS a solution in many cases, and that is *more production per man hour.* However, such a solution is possible only if a mill has MODERN equipment throughout so that "one hand will not undo what the other hand is doing."

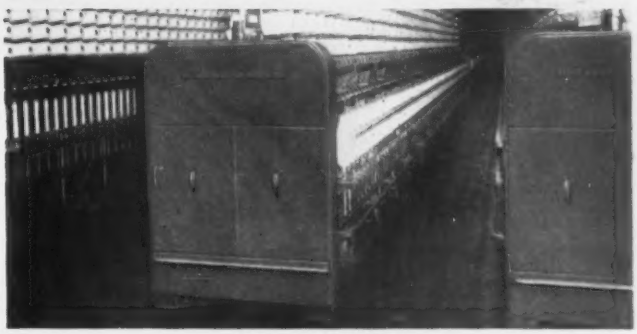
The H & B line of textile manufacturing equipment has been completely modernized in recent years. Below are illustrated and described briefly some of our major achievements.

H & B HIGH-DRAFT SLUBBING FRAMES

- Coilers built for 10″ or 12″ cans.
- Made with 4 or 5 lines of rolls, as specified.
- Eliminates from 1 to 3 operations, depending on job.
- Extruded aluminum roller beams, bobbin rails, snug rails, snugs and octagon rolls.
- Chain drive to bobbin shaft. Dependable builder motion.
- Efficient bottom and top clearers.
- Positive roll weighting — Streamlined saddle.
- Intermediate draft adjustments without changing overall draft.
- Differential motion has straight cut spur gears.

H & B HIGH-DRAFT SPINNING FRAMES

- Supplied with H & B Casablancas or H & B 4-Roll Long-Draft Spinning System, as specified.
- Designed and built for superior performance.
- Extruded aluminum ring rails, spindle rails and roller beams.
- Bijur Lubrication system.
- Chain drive from cylinder to jack gear.
- Spindle speeds as high as ring travelers will permit.
- Low, sturdy and vibrationless. Enclosed gearing with swivel type doors.
- Flexible, easily adjustable builder motion with ball thrust bearing, single or double worm drive.
- 6″, 7″ 8″, or 9″ traverse for rings from 1¼″ to 3½″diameter.



H & B TWISTERS

- Deliver well shaped, firm bobbin carrying the maximum yardage permissible within natural limits imposed by traverse and ring diameter.
- Builder motion assures trouble-free run-off on any type of high speed winder or other equipment.
- Metallic traversing thread board assures even tension.
- Anti-friction tension pulley promotes constant spindle speed.
- Wet twisters have automatic water feed control.
- Ball bearing thrust washer in builder drive prevents dwelling.
- Machine will not start when doors are open.
- Silent chain drive from cylinder to jack shaft.
- Replaceable bottom roll bearings reduce maintenance cost.
- Anti-friction bearings on cylinders save power and maintenance.

Note When adopting one-process picking or high-draft spinning, it is not always necessary to purchase completely new equipment. The condition of your old equipment may be such that it will pay you to change it over. We will gladly make recommendations in this connection.

Have you reached a seemingly "dead end street"? If so, let us help you to find a way out through moderniaztion.

MACHINE CO.

DIVISION **PAWTUCKET, RHODE ISLAND, U. S. A.**

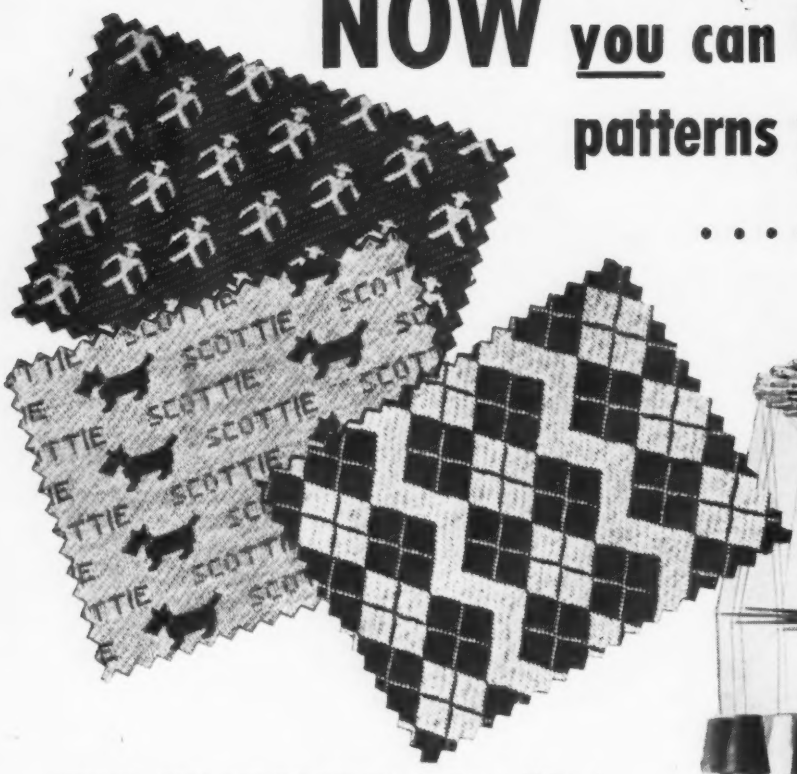
BRANCH OFFICES

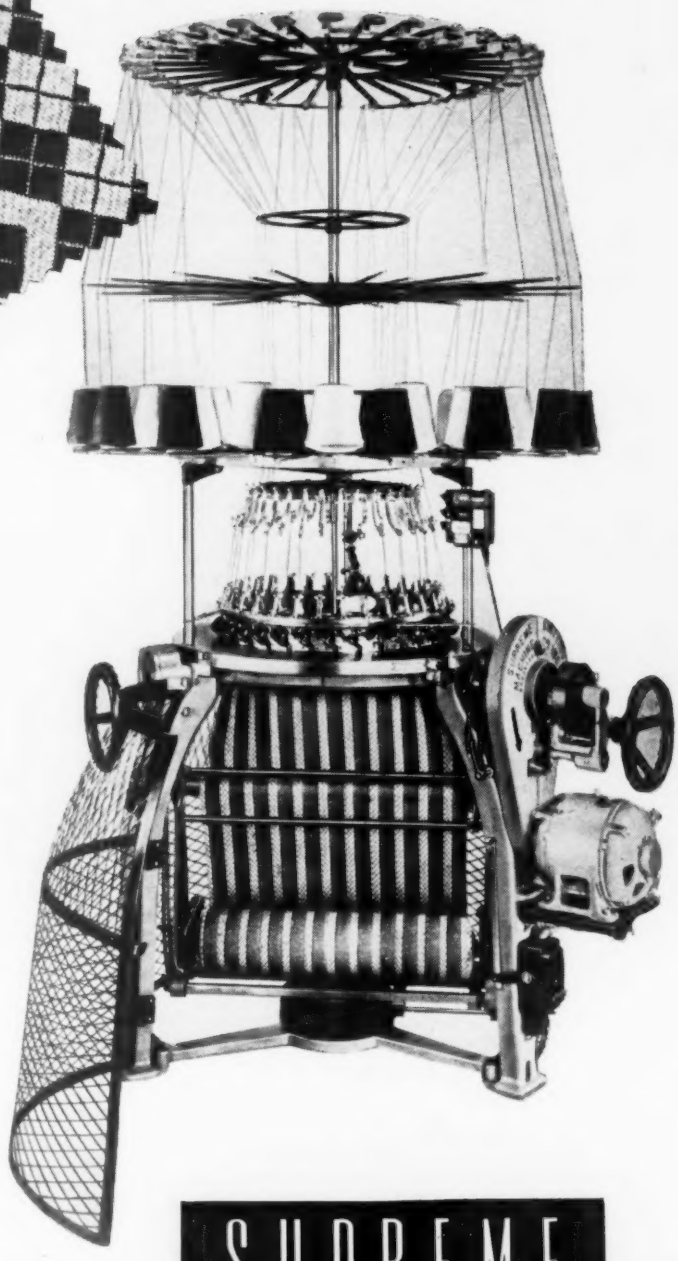
ATLANTA, GA.
815 CITIZENS AND SOUTHERN NATIONAL BANK BUILDING

CHARLOTTE, N. C.
1201 JOHNSTON BUILDING

NOW you can knit widely spaced patterns with no loose floats

. . . . on the MODEL ROF*





MODEL ROF "FLOATLESS" Pattern Wheel Machine gives you "The Rights" and ability to produce "Lombardeen"* fabrics simply and easily.

The New MODEL ROF gives you:

1 The ability to produce at 30 yds. per hr., multi-color fabric having precisely defined, widely spaced, solid color figures and fields . . . with each float "laid in" . . . tied securely to the back of the fabric without showing on the face.

2 One machine to knit and welt, knit and tuck, and welt and tuck on any or all feeds, with the same set of needles and pattern wheels, *without changing needles, pattern wheels or cams.*

3 Your choice of patterned and designed cloth, lay-in cloth, knit and welt cloth, solid plaited cloth or lace cloth.

4 Float and stretch control . . . you can vary or completely eliminate the float or "lay-in" to get different degrees of cloth tightness or stretch.

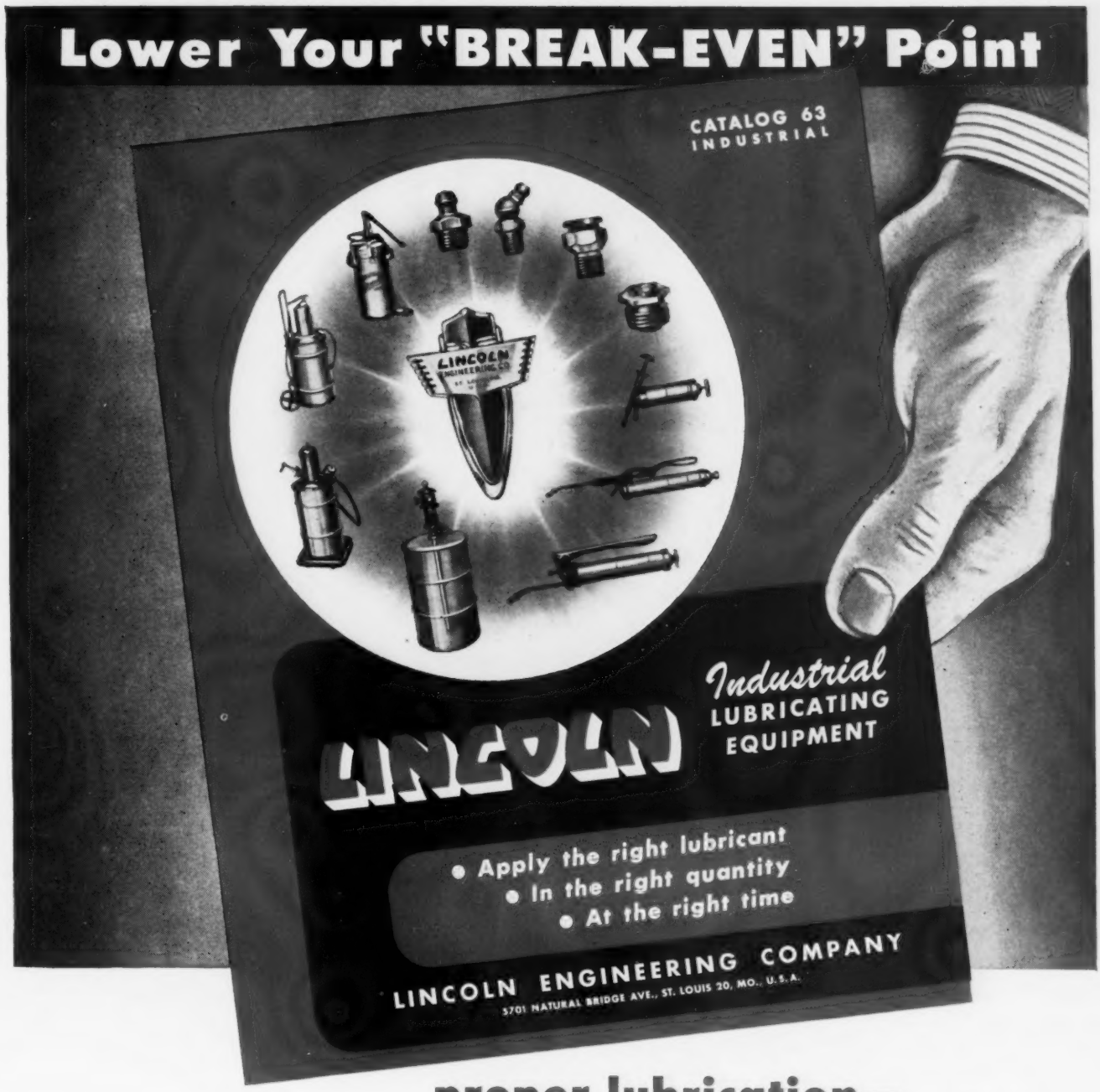
5 The license to produce unlimited "Lombardeen"* cloth on the ROF without paying yardage, poundage, or machine royalties.

A circular, latch-needle machine of sinker-top type, the new 24" diameter, 32 feed MODEL ROF is simple to arrange, set and operate. It gives you production versatility that enables your mill to keep in step with fashion changes. SK-103

SUPREME
KNITTING MACHINE CO., INC.
105 Johnson Ave., Brooklyn 6, New York, N. Y.

**The new MODEL ROF combines many exclusive Supreme patents with those of the well-known knitter-inventor, Vincent Lombardi. Each machine is licensed under U. S. Patent Numbers: 1,541,230 1,728,293 1,728,294 1,817,199 1,831,963 1,831,964 1,981,057 2,002,271 2,040,318 2,066,408*

Lower Your "BREAK-EVEN" Point



proper lubrication—
the LINCOLN way—cuts costly "down-time"

Steadily rising operating overhead can be curtailed by proper methods of lubrication. Costly "down-time" to repair damaged bearings — slowed production — excessive maintenance costs — heavy power consumption caused by faulty lubrication — can all be reduced to a minimum by lubricating the Lincoln way! Lincoln's new Industrial Lubricating Equipment Catalog No. 63 and Centro-Matic Bulletin No. 801 show you how...get your copies today!

Ask your Wholesale Distributor, or write to any of the Lincoln offices listed below.

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BOSTON—H. G. Davis, Inc.—Kenmore 5176
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Lincoln is the originator of the Kleenseal Surface Check Grease Fitting—the new, modern fitting with the ball in the top.

LINCOLN

LINCOLN ENGINEERING COMPANY
Leaders in Lubricating Equipment for a Quarter Century
5701 NATURAL BRIDGE AVE., ST. LOUIS 20, MO.

"TEXROPE Vari-Pitch Boosted Our

CARON SPINNING CO., ROCHELLE, ILL. Vari-Pitch Speed Changers driving a line of spinning frames. A total of 22 Vari-Pitch Speed Changers has been installed since the original order in 1943. Ralph Finkboner, spinning room foreman, says, "Vari-Pitch Speed Changer is the best on the market."

Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.

SPEED CHANGERS Production" —SAYS MILL FOREMAN

WHEN TEXROPE Vari-Pitch Speed Changers replaced another type of drive in this Illinois worsted mill, production on the spinning frames shot upward. Speed could be adjusted while the machines were running, adding valuable production time. Frames could be operated at highest production rate because speed could be regulated accurately to within a few RPM at the turn of a handwheel. The initial installation was so profitable that Texrope Vari-Pitch Speed Changers drive all spinning frames in this mill.

Texrope Vari-Pitch Speed Changers give you smooth power and infinitely variable speeds over a range of 375%. Simple design and Texrope V-belt drive make them clean running and easy to maintain. Texrope Vari-Pitch Speed Changers will save you money wherever close speed control and quick speed changes are required.

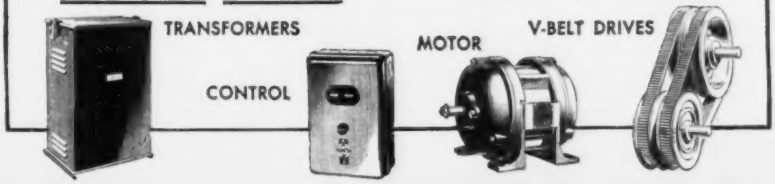
CONSULT ALLIS-CHALMERS ON ALL YOUR DRIVE NEEDS

Many variable speed drive problems can be solved efficiently and economically with Vari-Pitch Standard or Wide Range Sheaves. These are available with Motion Control which permits speed to be adjusted while the machine is operating, and Stationary Control which requires that the machine be stopped for adjustment. Consult your Allis-Chalmers Authorized Dealer or District Office.

ALLIS-CHALMERS, 1056A SO. 70 ST.
MILWAUKEE, WIS.

A 2539

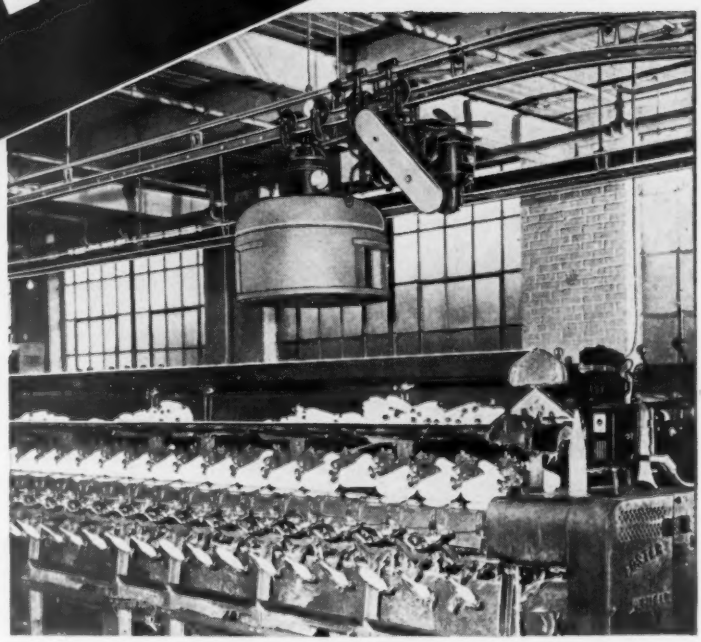
COMPLETE SERVICE *Power Line to Machine*

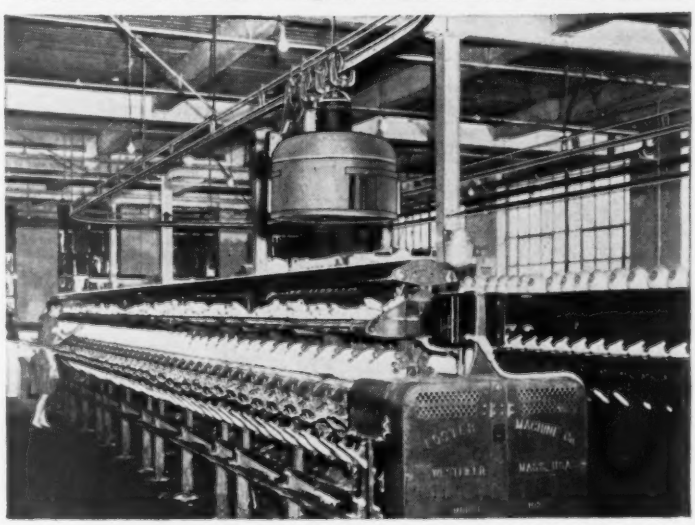


ALLIS-CHALMERS

Originators of the Multiple V-belt Drive for Industry

Clean Winders MEAN Clean Yarn FOR PROFITABLE PRODUCTION





Take a typical example—in a combed yarn mill in North Carolina, four winders were relocated, making it necessary to shut down the cleaning system for five weeks. During this time the yarn, in spite of all precaution, became so full of fly that many customers complained because of machine stoppage. This condition was entirely eliminated when the blower was put back in operation.

You, too, can eliminate fly, lower cleaning costs, reduce machine stoppage and get better running work with American MonoRail Automatic Overhead Cleaners. Write for the new 24 page book explaining cost saving advantages or let an American MonoRail Engineer tell you the complete story of Controlled Cyclonic Cleaning and Overhead Handling.

THE AMERICAN MONORAIL COMPANY

ATHENS AVENUE **CLEVELAND 7, OHIO**

Smoother OPERATION!

Ball Bearing Off End Stand

Ball Bearing Comb Box

Here's the companion piece to Southern States' Ball Bearing Comb Box . . . the Ball Bearing Off-End Stand! This new Stand is designed to provide smoother and completely leak-proof operation of your Comb Stocks. It is available for all current makes of cotton cards.

A completely sealed bearing unit, this new stand—when used in combination with the Southern States Ball Bearing Comb Box—eliminates the possibility of oil damage at the front of the card. While adjustments can be made at the Comb Box, the new Ball Bearing Stand will correct **minor** misalignment of the Comb Stock.

Southern States makes available to you **now** either separate unit or combination replacements of your old, worn-out comb boxes, comb stocks, and off-end stands. Purchase them individually or take advantage of complete replacement by ordering the three units at one time. Specify make of cotton card when ordering.

Replace old sleeve-type bearings with the new Southern States Ball Bearing Off-End Stand. Adaptable to **any current make of cotton card,** this efficient unit is completely **sealed,** requiring a minimum of attention. Simply and quickly installed, it is available for either right—or left—hand mounting and can be reversed **right in your cardroom!** You can insure more accurate comb setting—retain this accuracy for the life of the bearing.

Southern States Equipment Corp.

HAMPTON GEORGIA

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Mathews Equipment Co. Providence, R. I.	C. H. Kennington Charlotte, N. C.	Textile Parts & Machine Co. Gastonia, N. C.	

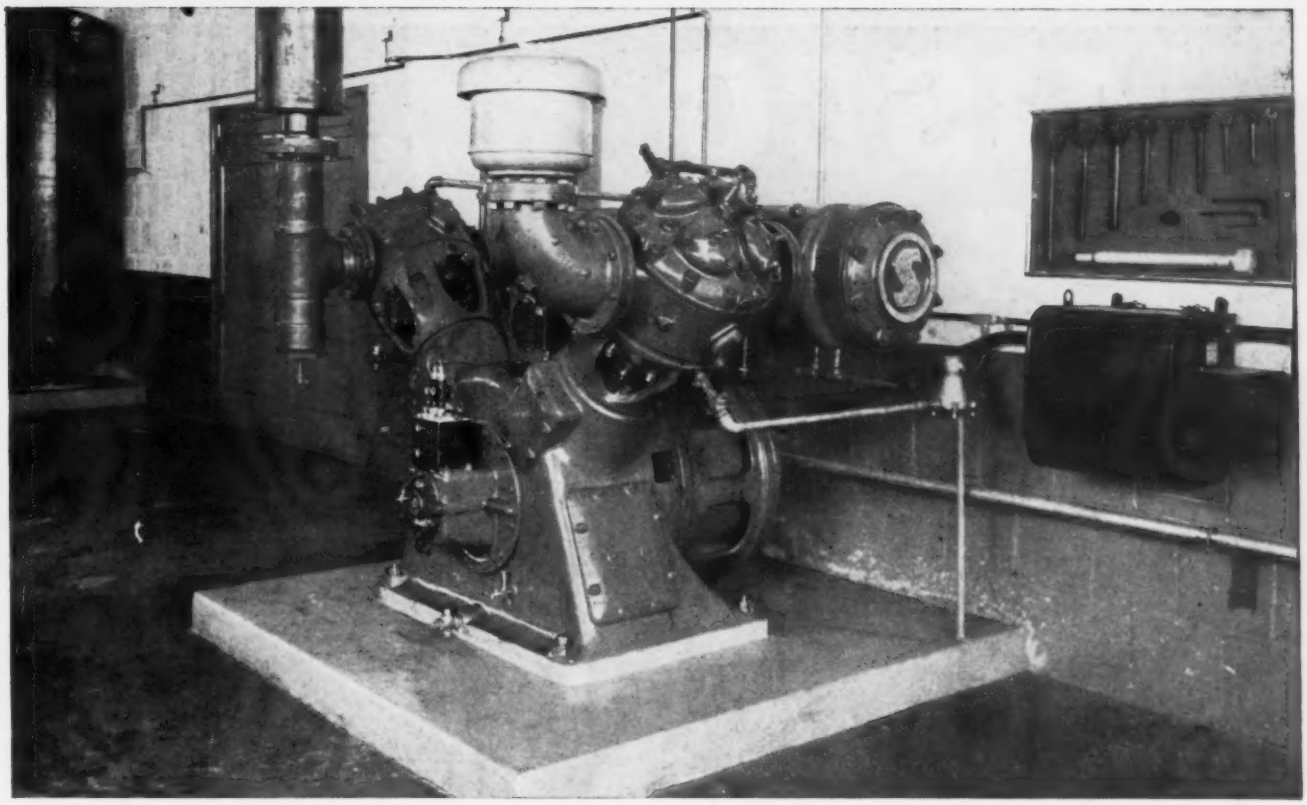
Largest Manufacturer of Cast-Tooth and Cut-Tooth Gears in the South

PERKINS

DIAMOND JUBILEE

Perkins Calender Rolls are the result of the longest and broadest experience. No Calender is better than the rolls in it.

B. F. PERKINS & SON, Inc.
ENGINEERS AND MANUFACTURERS
HOLYOKE, MASSACHUSETTS



Here's top efficiency in the 400 to 1800 c. f. m. range!

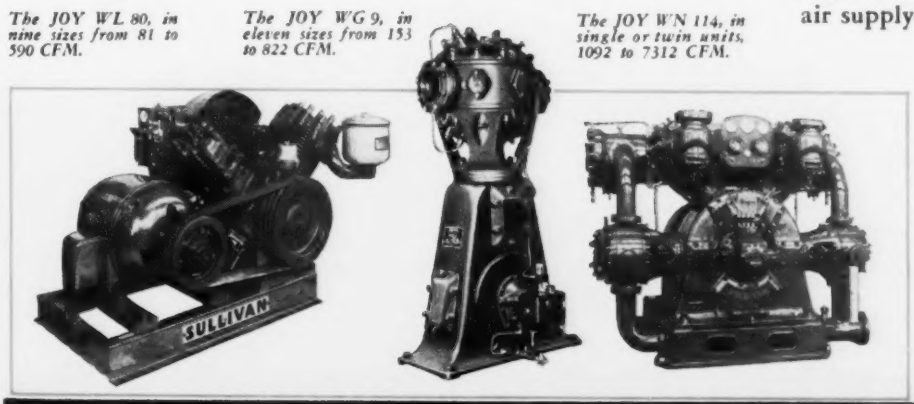
The JOY WN-112 AIR COMPRESSOR

Built in sizes from 378 to 1828 CFM, the JOY WN-112 is a two-cylinder, two-stage, heavy-duty compressor with the exclusive JOY "Dual-Cushion" valves for top efficiency. Compact and highly modern, it saves space and cuts installation costs. ● JOY builds the most modern compressors available for either centralized or de-centralized air supply—*write for Bulletin.*

The JOY WL 80, in nine sizes from 81 to 590 CFM.

The JOY WG 9, in eleven sizes from 153 to 822 CFM.

The JOY WN 114, in single or twin units, 1092 to 7312 CFM.



Consult a Joy Engineer

W&D 12055

JOY MANUFACTURING COMPANY

GENERAL OFFICES: HENRY W. OLIVER BUILDING · PITTSBURGH 22, PA.

IN CANADA: JOY-SULLIVAN OF CANADA, LIMITED, GALT, ONTARIO

MISCO *Stainless Steel* CASTINGS

CORROSION RESISTING · HEAT RESISTING · WEAR RESISTING

MISCO STAINLESS STEEL CASTINGS ARE AVAILABLE IN SMOOTH CAST CONDITION OR AS FINISHED PRODUCTS MACHINED TO A HIGH DEGREE OF PRECISION

Whenever you need stainless steel castings call on MISCO first. We cast all commercial grades of stainless steel including hardenable types as well as austenitic varieties such as 18-8 in its several modifications. We offer unequalled facilities for the production of stainless steel castings for use under the most severe conditions. *Let us know your needs.*

Metallurgical and Engineering Data Sheets furnished upon request

LARGE AND MEDIUM WEIGHT STAINLESS STEEL CASTINGS · SMALL PRECISION CASTINGS · CENTRIFUGAL CASTINGS

ALLOY CASTING DIVISION
Michigan Steel Casting Company

MISCO
Heat and Corrosion Resistant Alloys

One of the World's Pioneer Producers and Distributors of Heat and Corrosion Resisting Alloys

1996 GUOIN STREET · DETROIT 7, MICHIGAN

SARAN

BY NATIONAL

Fabrics of saran . . . unmatched for versatile, long-lived beauty.

. . . Sturdy saran monofilaments weave a new note of extreme wear resistance and versatility into luxurious modern fabrics. Saran presents a new texture . . . a rare depth of color, from vibrant tones to soft pastels . . . a new concept of luxury in fabrics that withstand rugged wear and stay beautiful with little care. You'll find the versatile beauty of clean, lint-free saran monofilaments, as fine as .005″, inspires new craftsmanship in the world of textiles

REG. U. S. PAT. OFF.

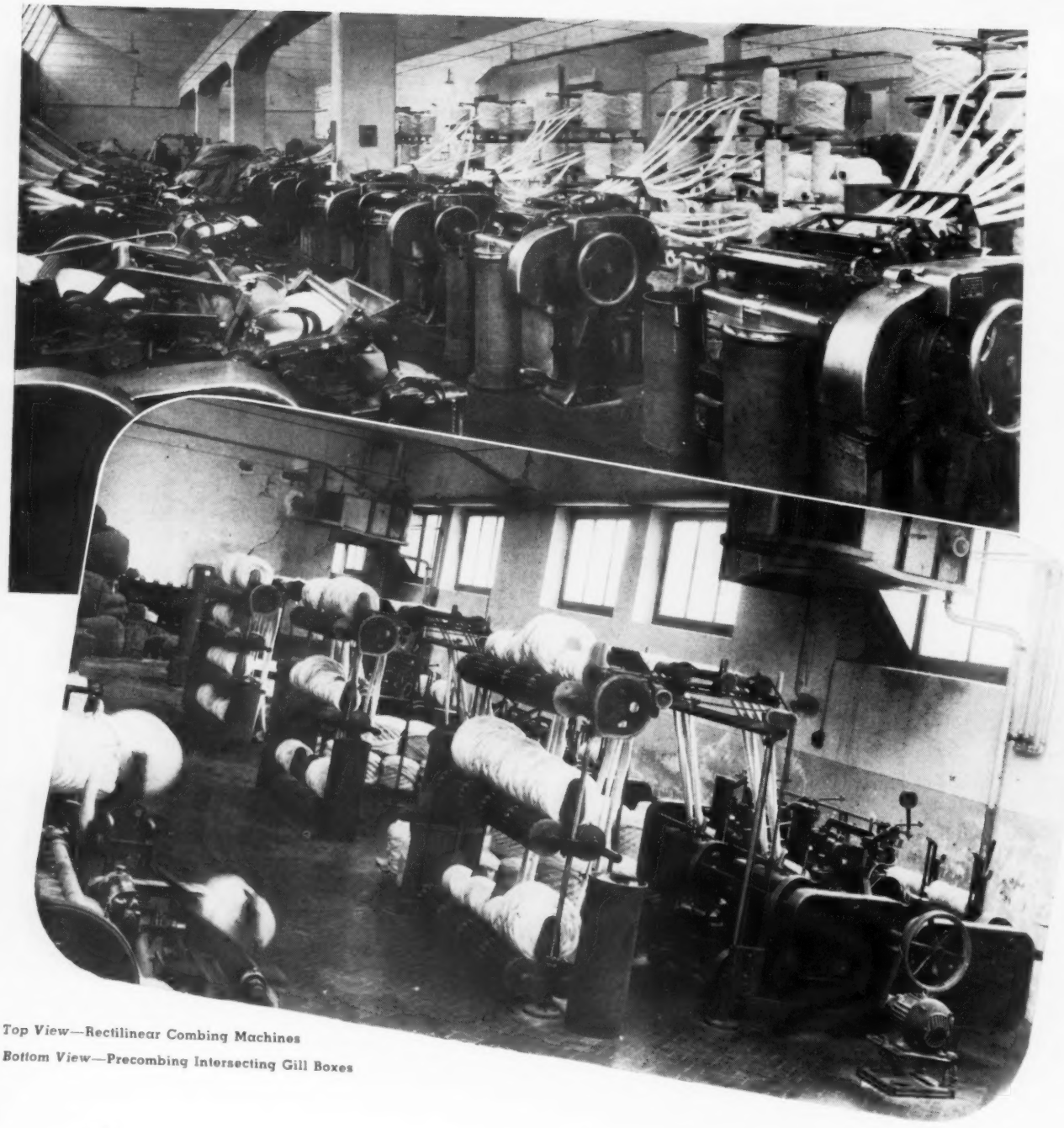
Saran by National

ODENTON, MARYLAND

New York: Empire State Building • Los Angeles: Bankers Building

SARAN

SARAN BY NATIONAL *denotes monofilament, rattan and tape manufactured by The National Plastic Products Company from Dow's saran, and supplied to mills, weavers and other fabricators.*



Top View—Rectilinear Combing Machines

Bottom View—Precombing Intersecting Gill Boxes

We manufacture a complete line of machines for combing and spinning of worsted yarn on the Continental System.

25 Years Experience. Our Machines Are Running in Hundreds of Mills All Over The World.

OSA

Officina Meccanica

SANT'ANDREA — NOVARA, ITALY

Exclusive Agents for U.S.A. ERNEST L. FRANKL ASSOCIATES, 22 East 40th St., New York, U.S.A.

Learn these Definitions

rayon

A textile fiber made of *regenerated cellulose.* (Example: viscose.)

estron

A textile fiber made of an *ester of cellulose.* (Example: cellulose acetate.)

● These separate and distinct names for the two major types of man-made fibers are recommended by the Committee on Textiles of the American Society for Testing Materials, the membership of which includes many leading manufacturers, distributors, and users of textile products.

Tennessee Eastman will follow the ASTM recommendation and identify its cellulose acetate fibers as *estron*, not rayon.

Tennessee Eastman Corporation

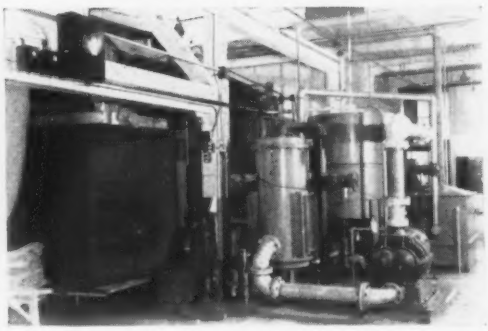
SUBSIDIARY OF EASTMAN KODAK COMPANY

KINGSPORT, TENNESSEE

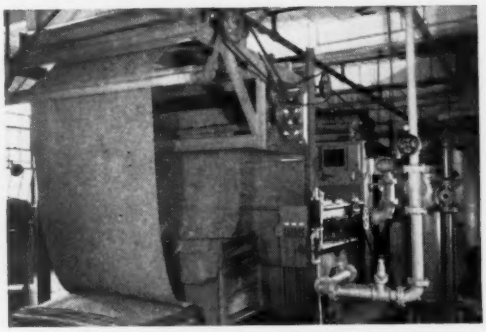
The Fleet Line

DERBY DRY CLEANER

VERSATILITY Is A Leading Characteristic



Installation in a New England mill making women's wear woolens.



Installation in a Maryland mill making cassimeres, flannels, tweeds and shetlands.

Fabrics now being handled by this machine include woolens, worsteds, rayon mixtures and mohair plushes. Although it involves a considerable investment and volume production, many machines are now in use. Constant improvement in design, greatly decreased solvent consumption and tremendous operating economies account for its popularity.

ADVANTAGES

1. Removal of tar, paint, asphalt, creosote, pigment, chalk, etc.
2. Almost any type of wool oil can be used — even cheap mineral oils.
3. Tremendous savings in oil, through reclamation.
4. Elimination of stream contamination from oil residue.
5. Reduces burling and mending.
6. Great reduction in perching.
7. Minimum oil content in the finishing room.
8. Scouring usually eliminated.
9. Little or no soap required.
10. Big saving in hot water.
11. Possibilities in acid fulling of Derby Dry Cleaned fabrics.
12. Reduction in redyes and seconds.

Circular on request

RIGGS AND LOMBARD

INCORPORATED

FOOT OF SUFFOLK STREET • LOWELL, MASSACHUSETTS

Agents: PAUL A. MERRIAM, 1491 Broad Street, Providence, R. I.
CHARLES H. DUNKER, 701 7th St., Coronado, Calif.
HAROLD C. OSLER, 6312 Sherwood Road, Philadelphia, Pa.
ALBERT R. BREEN, 80 Ea. Road, Philadelphia, Pa.

THE FLEET LINE OF FINISHING EQUIPMENT

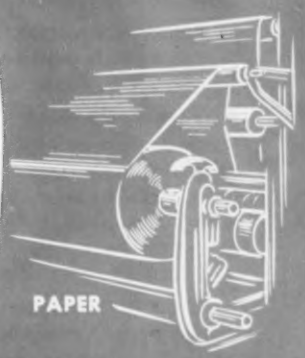
Cloth Washers—Batch and Continuous • Fulling Mills • Piece Dye Kettles • Dye Becks • Rope Soapers • Cloth Carbonizing Ranges • Soaping Machines • Derby Continuous Dry Cleaners • Tenter Dryers • Top Dyeing Machines Crushers • Multi-Lap Continuous Process Machine • Stock Dye Kettles • Rolls • Reels • Parts

Introducing

NYON 218

Combines in one Product

- **A high degree of detergency**
- **Extremely fast wetting action**
- **Excellent properties of dispersion and emulsification**



More about NYON...

NYON 218 is a clear, straw colored liquid surface active agent of the non-ionic type. It is supplied in highly concentrated form and contains no alkali.

The performance of NYON 218 is scarcely affected by the degree of water hardness. While most synthetics are effective within narrow limits, NYON 218 is efficient over wide variations in pH and temperature. It can be compounded with soap and with synthetic anionic or cationic surface active agents to improve materially many of their properties.

The action of NYON 218 is so powerful that there are few instances where it need ever be used in concentration exceeding 0.05%. Not only does the detergent action of NYON 218 rank with the very best of the synthetics, it is also a faster wetting agent than most compounds recommended specifically for that purpose.

It is unusual for a *single* product to demonstrate all these surface active properties to such a high degree of efficiency. For this reason NYON 218 excels in a widely diversified range of applications.

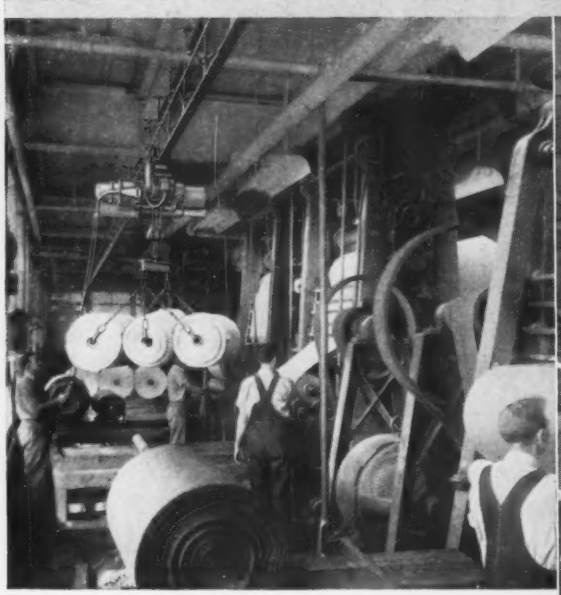
NYON 218 is readily available in drums and tank cars. We will be glad to send samples and information at your request.

SHARPLES CHEMICALS INC.

123 S. BROAD STREET • PHILADELPHIA 9, PA.

SHARPLES TRADE MARK CHEMICALS

USE CEILING SPACE FOR TRANSPORTING MATERIALS



SAVES FLOORS-SPACE-TIME

Dozens of textile mills have discovered that unused ceiling space can be put to profitable use by installation of overhead Cleveland Tramrail materials handling equipment.

Floor congestion is relieved by delivering materials overhead. Floor wear is greatly reduced. Floor space is saved.

The many usual floor hindrances do not impede Cleveland Tramrail. When transporting materials overhead there are no men, machines or other obstacles in the way. The path ahead is always clear and it is the best and most efficient route because it is carefully planned that way.

Let us demonstrate how you too can profit with Cleveland Tramrail for handling rolls, lap, beams, bales, raw stock, etc. No obligation, of course.

(Above) It is easy to convey heavy rolls of cloth and place them into the hookers with this hand propelled carrier and electric hoist

(Upper left) Three rolls of cloth are usually carried at a time with the Cleveland Tramrail system to these calenders

GET THIS BOOK!
BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
8461 EAST 287TH ST., WICKLIFFE, OHIO

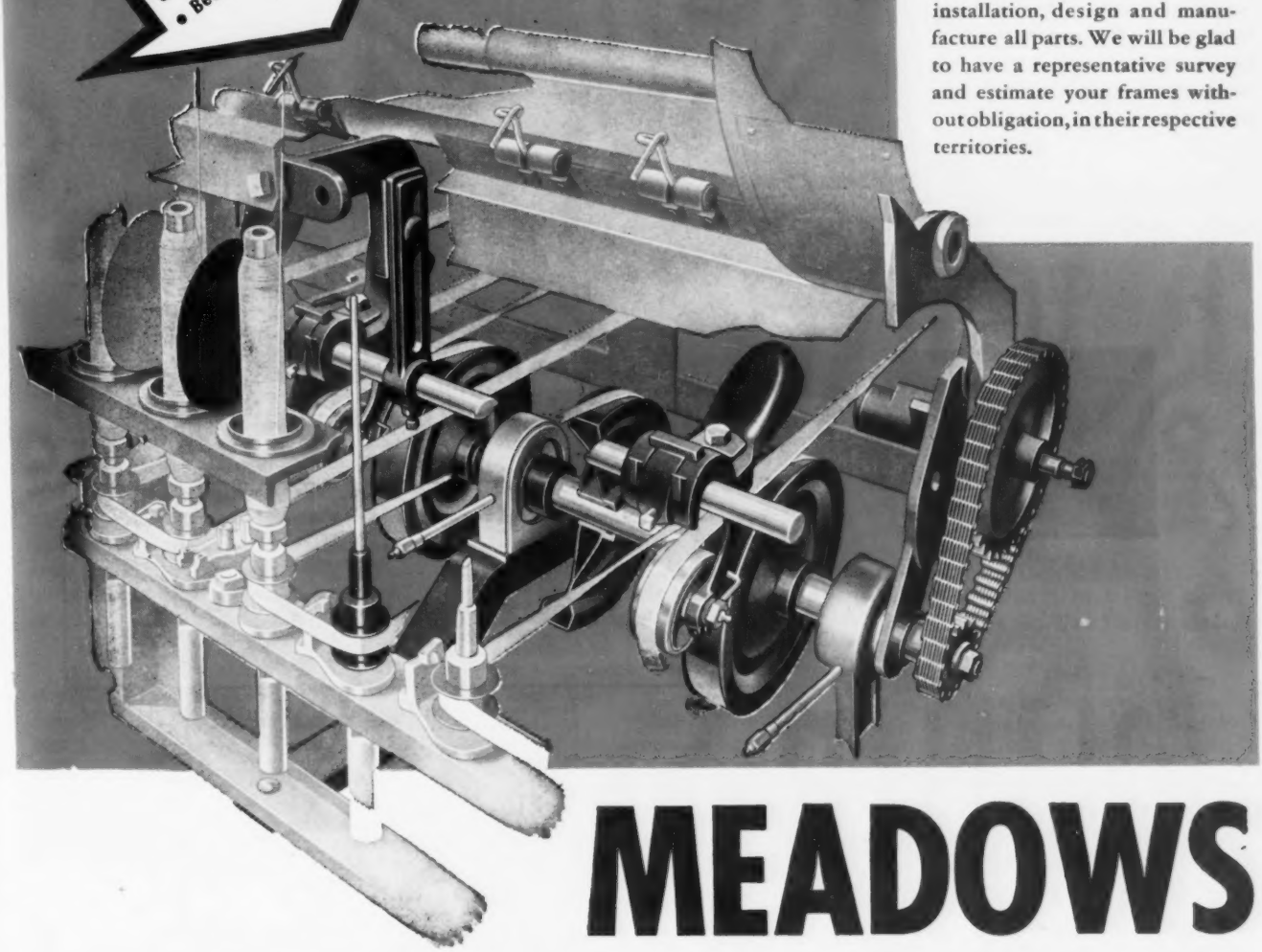
CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

Step Up Production of OLD FRAMES

MILLS have found that the *quickest,* most *economical* way to increase production on old-model band-driven or tape-driven frames is with Meadows Conversions...Consisting of Ball Bearing Tape Tension Pulleys, light weight solid aluminum Separators, silent Chain Drive, Individual Drive Pulley, and ground and polished Shafting mounted on heavy-duty ball bearings—these conversions assure *low power* consumption, no *tapes off* due to choked or sticky pulleys, less wear on yarn, increased *output* and *no more cylinder trouble.*

- Fewer Ends Down!
- No More Heads to Jerk Out!
- No More Cylinder Trouble
- Less Vibration!
- Uniform Speed and Twist!
- Better Package-More Yarn!

We engineer and service each installation, design and manufacture all parts. We will be glad to have a representative survey and estimate your frames without obligation, in their respective territories.



MEADOWS

MANUFACTURING COMPANY • ATLANTA, GA.

High Production AXMINSTER CARPET LOOMS

The simplest in operation and the Highest Production loom of its type IN THE WORLD

The ingenious split shot method of inserting foundation fabric weft in the Platt loom gives an added advantage to the Axminster type of weaving by reducing costs of manufacture and greatly increasing loom production.

Standard Widths	Recommended Speeds	Standard Widths	Recommended Speeds
Wide Looms:		Narrow Looms: (continued)	
10/4	19 rows of tufts per min.	27 inch	28 rows of tufts per min.
12/4	18 rows of tufts per min.	32 inch	27 rows of tufts per min.
14/4	17 rows of tufts per min.	36 inch	26 rows of tufts per min.
16/4	16 rows of tufts per min.	45 inch	25 rows of tufts per min.
Narrow Looms:		48 inch	24 rows of tufts per min.
18 inch	30 rows of tufts per min	54 inch	23 rows of tufts per min.
22 inch	29 rows of tufts per min.		

These speeds are approximately 33⅓% greater than those used for double needle double insertion looms.

We shall be happy to supply further information on request.

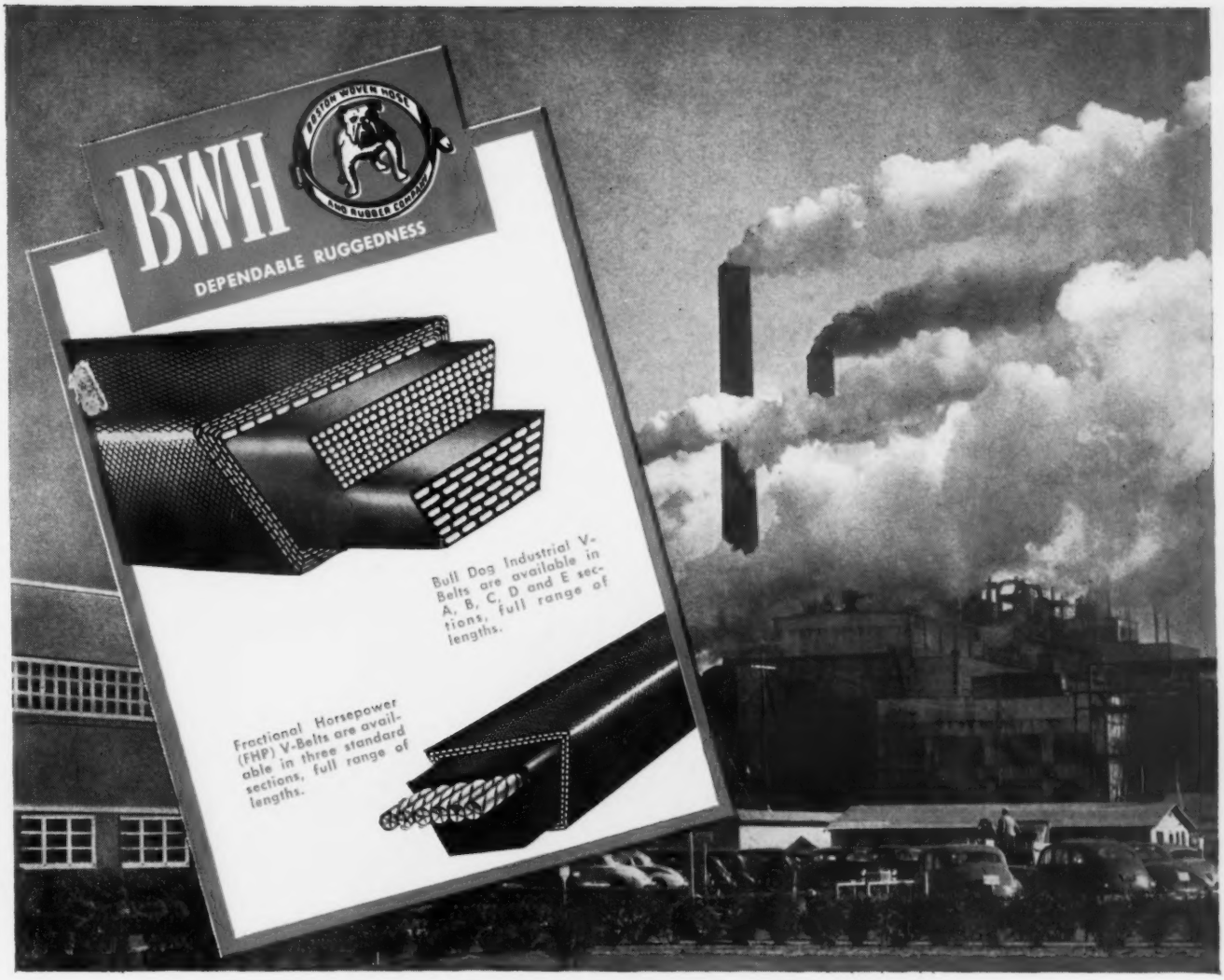
Platt Bros. (SALES) LIMITED.

OLDHAM, ENGLAND. TELEPHONE MAIN (OLDHAM) 3 8 8 4

TELEGRAMS TEXTILMAK OLDHAM.

MARKETING THE TEXTILE MACHINERY MADE IN THE WORKS OF PLATT BROTHERS & CO. LTD. HOWARD & BULLOUGH LTD.

DOBSON & BARLOW LTD. BROOKS & DOXEY LIMITED ASA LEES & CO. LTD.


BWH
BOSTON WOVEN HOSE AND RUBBER COMPANY
DEPENDABLE RUGGEDNESS
Bull Dog Industrial V-Belts are available in A, B, C, D and E sections, full range of lengths.
Fractional Horsepower (FHP) V-Belts are available in three standard sections, full range of lengths.

HERE'S WHY ALL INDUSTRIES ARE TURNING TO

NEW BULL DOG V-BELTS

Industrial experts agree that the most important factor in improving productivity is better equipment. As a result, they're scanning new products eagerly and giving them thorough workouts. And BULL DOG V-BELTS are among the newcomers that have more than won their spurs in every trial.

It's typical of the 70-year BWH fame for precision that these V-Belts weren't put on the market till they'd been exhaustively tested in the field. BULL DOGS proved they had real tenacity. They gripped tighter, slipped less, stayed on the job longer. And here's the construction that accounts for this superior performance:

1. Exclusive Bull Dog Cord Section has higher tensile strength—able to carry the load and absorb shock.
2. Low Stretch, because exclusive Bull Dog Cords are processed in a new way. As a result there's less slippage, fewer adjustments, longer life.
3. Cool Running—thanks to quality-controlled compounds developed in BWH laboratories, which don't crack or deteriorate under severe flexing.
4. Wear-Resistant covers—made of bias-cut heavy fabric to protect heart of belt from dirt, grease, moisture.

Specify Bull Dog V-Belts on all replacements. You'll find they mean "More Power To You" every time.

HAVE YOU A JOB WHERE STAMINA COUNTS?

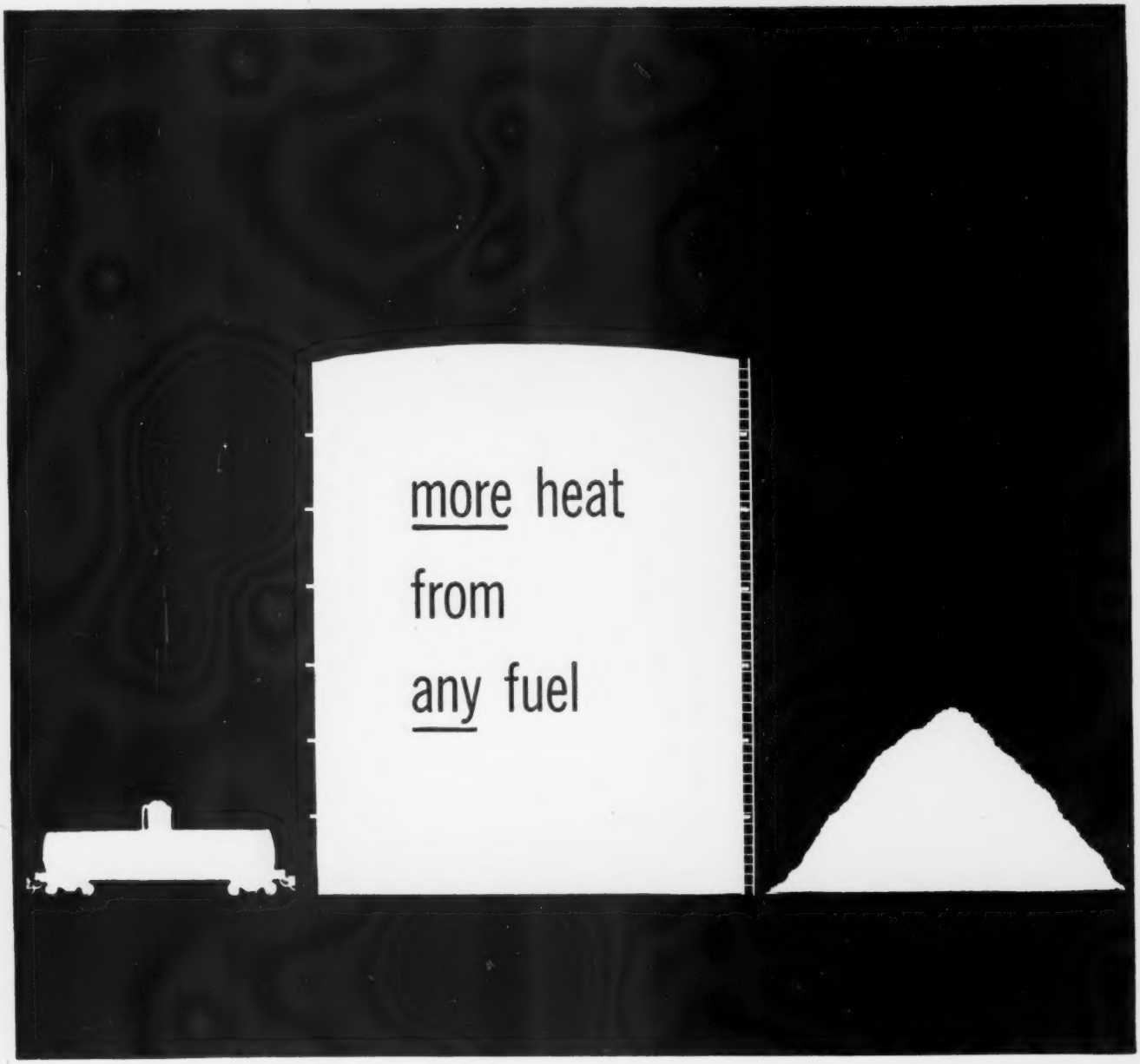
Bring us your toughest problems . . . we're specialists in solving them. Consult your nearest BWH distributor or write to us direct.

Another Quality Product of

BOSTON WOVEN HOSE & RUBBER COMPANY

Distributors in all principal cities

PLANT: CAMBRIDGE, MASS., U. S. A. • P. O. BOX 1071, BOSTON 3, MASS.



Want to be sure of abundant, low-cost heat in mill, factory, warehouse or other industrial or commercial buildings? The answer is Carrier Heat Diffusers.

The scientific design of these heavy-duty standard units assures maximum heating economy. Wide uniform coverage is easy with the relatively high velocities of Carrier diffusers. Their adaptability to either low or high pressure steam or forced-circulation hot water systems has made them the choice of the largest industries.

With dynamically balanced centrifugal-type fans, belt-driven through vari-speed pulleys, a wide range of speeds and capacities is provided. Even heat distribution with efficient temperature control (manual or automatic) at full or partial loads is assured with either modulating steam valves on NON-FREEZE tube coils or by face and by-pass dampers (THERMADJUST) to regulate the volumes of heated and by-passed air.

Carrier Heat Diffusers are shipped as complete units—ready to operate. Sectional design permits floor mounting or suspension with vertical or horizontal discharge. Units are adaptable to drying and fog elimination, as well as heating. Sizes in all models available in capacities from 156,000 to 1,570,000 Btu per hour.

Like every Carrier product, these efficient, long-life heat diffusers reflect wide experience and unrivaled engineering skill. These are added values that go along with Carrier industrial heating. Carrier Corporation, Syracuse, New York.

Carrier AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING

Color Harmony

Gowns: Jack Herzog Originals

Words of song, skillfully rendered, are pleasing to the ear . . . just as dyed mercerized yarns, skillfully knitted, are pleasing to the eye. Dixie Durene, dyed to match the shades of color you require, gives your products the color-attractiveness that makes consumers stop . . . and buy.

DIXIE MERCERIZING COMPANY
CHATTANOOGA 1, TENNESSEE

Made of
Durene*
multi-ply mercerized combed cotton yarn
4 WAYS BETTER
than ordinary cotton yarns
EXTRA COMFORT
—more absorbent
EXTRA STRENGTH
—longer wear
EXTRA QUALITY
—lasting lustre
EXTRA SERVICE
—easy to wash
* Reg. U. S. Pat. Off. © 1944

Dixie Durene

If it's power piping equipment it's in the CRANE line

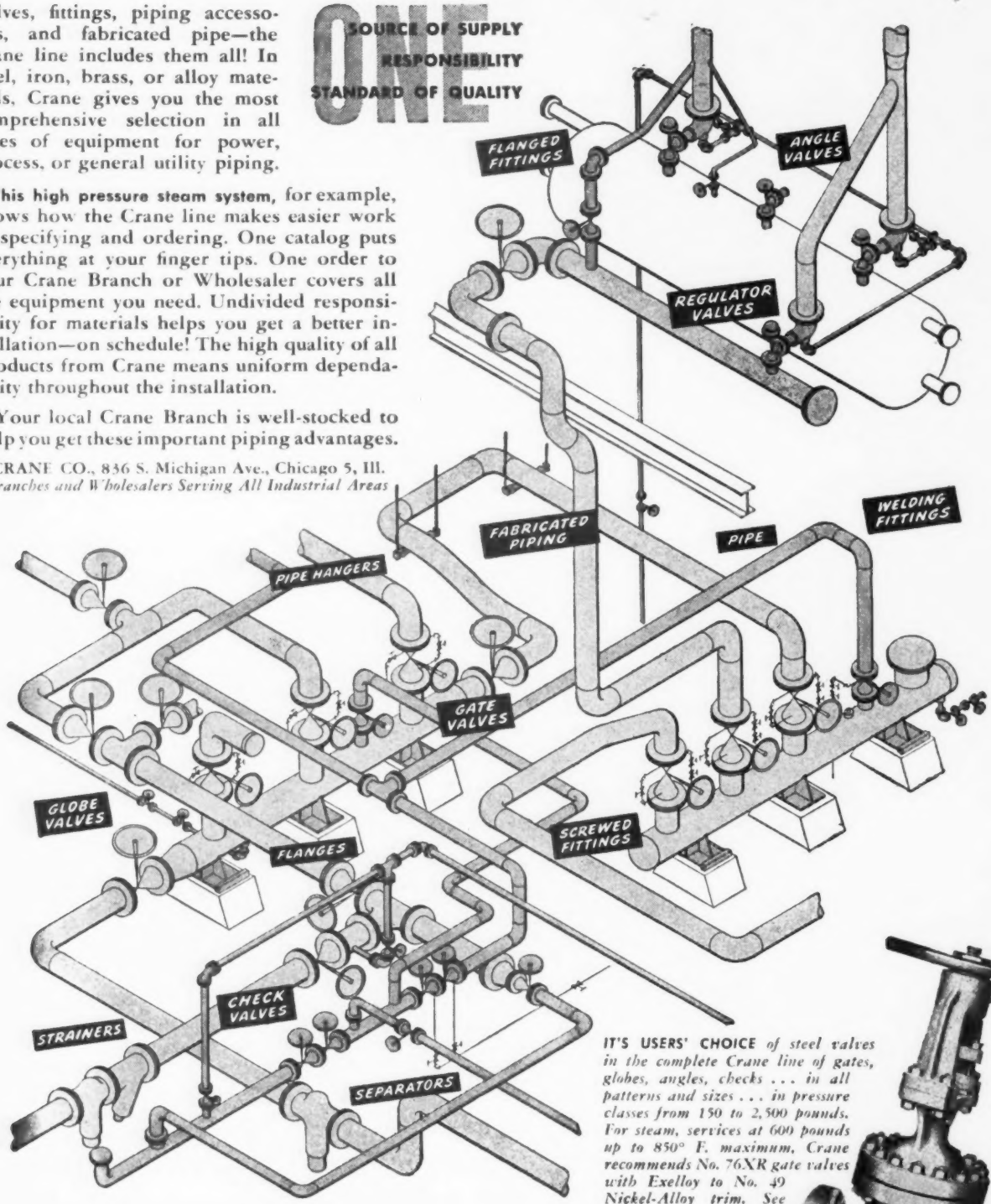
Valves, fittings, piping accessories, and fabricated pipe—the Crane line includes them all! In steel, iron, brass, or alloy materials, Crane gives you the most comprehensive selection in all types of equipment for power, process, or general utility piping.

ONE SOURCE OF SUPPLY
RESPONSIBILITY
STANDARD OF QUALITY

This high pressure steam system, for example, shows how the Crane line makes easier work of specifying and ordering. One catalog puts everything at your finger tips. One order to your Crane Branch or Wholesaler covers all the equipment you need. Undivided responsibility for materials helps you get a better installation—on schedule! The high quality of all products from Crane means uniform dependability throughout the installation.

Your local Crane Branch is well-stocked to help you get these important piping advantages.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas



IT'S USERS' CHOICE *of steel valves in the complete Crane line of gates, globes, angles, checks . . . in all patterns and sizes . . . in pressure classes from 150 to 2,500 pounds. For steam, services at 600 pounds up to 850° F. maximum, Crane recommends No. 76XR gate valves with Exelloy to No. 49 Nickel-Alloy trim. See your Crane Catalog.*

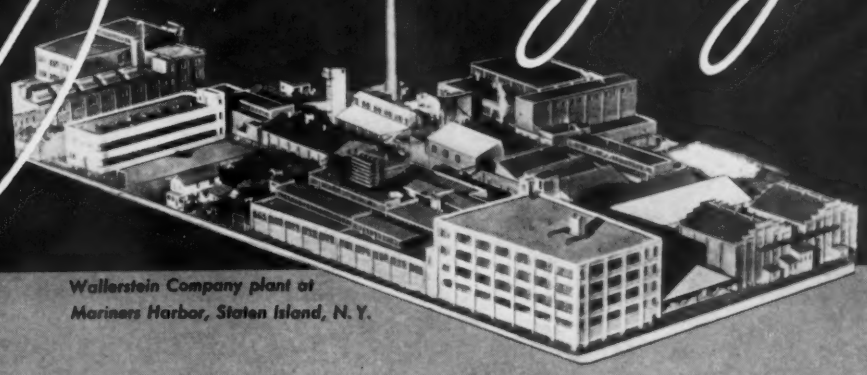
EVERYTHING FROM . . .

VALVES • FITTINGS
PIPE • PLUMBING
AND HEATING

CRANE

FOR EVERY PIPING SYSTEM

RAPIDASE
for de-sizing



Wallerstein Company plant at Mariners Harbor, Staten Island, N. Y.

SPEEDS PRODUCTION

WITH HIGHER DE-SIZING TEMPERATURES

IS AND ALWAYS HAS BEEN—

•

HEAT RESISTANT

•

RAPID IN DE-SIZING

•

LIQUID —— CONVENIENT

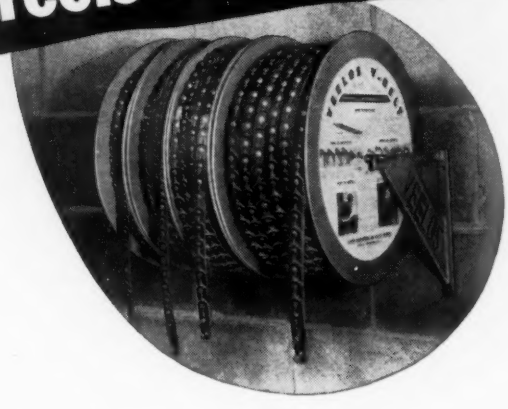
DE-SIZE FASTER AT LOWER COST WITH RAPIDASE

Technicians available • Write for Booklet

WALLERSTEIN COMPANY, INC. • 180 MADISON AVENUE • NEW YORK 16, N. Y.

Everyone of these v-belt sizes

can be replaced with 4 reels of Veelos



No matter how big your present V-belt inventory, you can drastically cut it with just 4 reels of Veelos. These handy reels give you a choice of more than 316 sizes in O, A, B and C widths. If you use only A and B sizes, just 2 reels of Veelos will provide you with a complete V-belt inventory. Any length belt is quickly uncoupled from a reel, made endless, then installed.

As soon as you specify Veelos on reels, you can stop stocking matched sets of endless belts. You can forget belt deterioration and obsolescence. Veelos on reels saves storage space . . . simplifies inventory records.

Veelos goes on fast . . . lowers machine downtime. On drives with outboard bearings it is installed without moving the motor or dismantling the machine. Veelos is made in all standard sizes . . . fits all standard grooves . . . is available in 100 foot reels. Sales engineers in principal cities; over 300 distributors throughout the country.

VEELOS
THE LINK
V-BELT

New Veelos Catalog... How Veelos on reels makes big V-belt inventories little is just one of the many features in the new Veelos catalog. All the facts and full engineering data are given. Write for your copy today.

MANHEIM MANUFACTURING & BELTING COMPANY
MANHEIM, PENNSYLVANIA

VEELOS is known as VEELINK outside of the United States

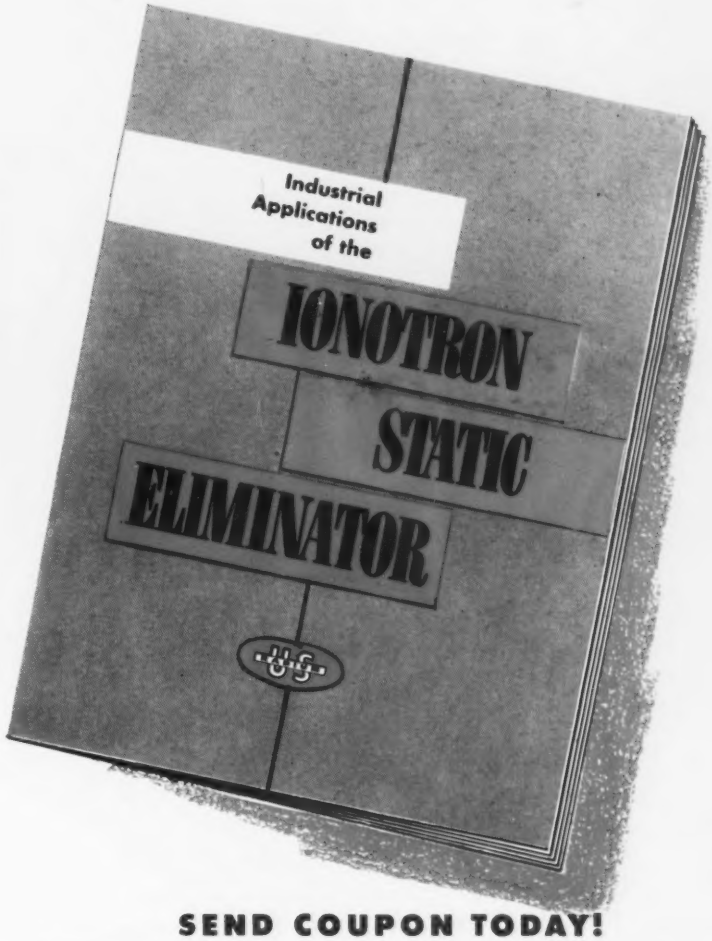
ADJUSTABLE TO ANY LENGTH • ADAPTABLE TO ANY DRIVE

NEW BULLETIN DESCRIBES HOW STATIC PROBLEMS ARE SOLVED

in various textile operations

This free, illustrated bulletin tells how well-known textile mills have eliminated production troubles caused by static electricity... how stoppages and spoilage have been slashed, production boosted, and quality improved with Ionotron Static Eliminators® ... on tape condensers, Peraltas, folding, coating and other machines.

This factual booklet contains diagrams, photographs, and information that show how you may save your mill thousands of dollars annually. It's yours for the asking!



U·S RADIUM

IONOTRON *Static* ELIMINATOR

SEND COUPON TODAY!

Dept. T-4
U. S. Radium Corporation
535 Pearl Street
New York 7, N. Y.*

Please mail to me free a copy of Bulletin 8.4 on solving static problems.

Name_____

Position_____

Company_____

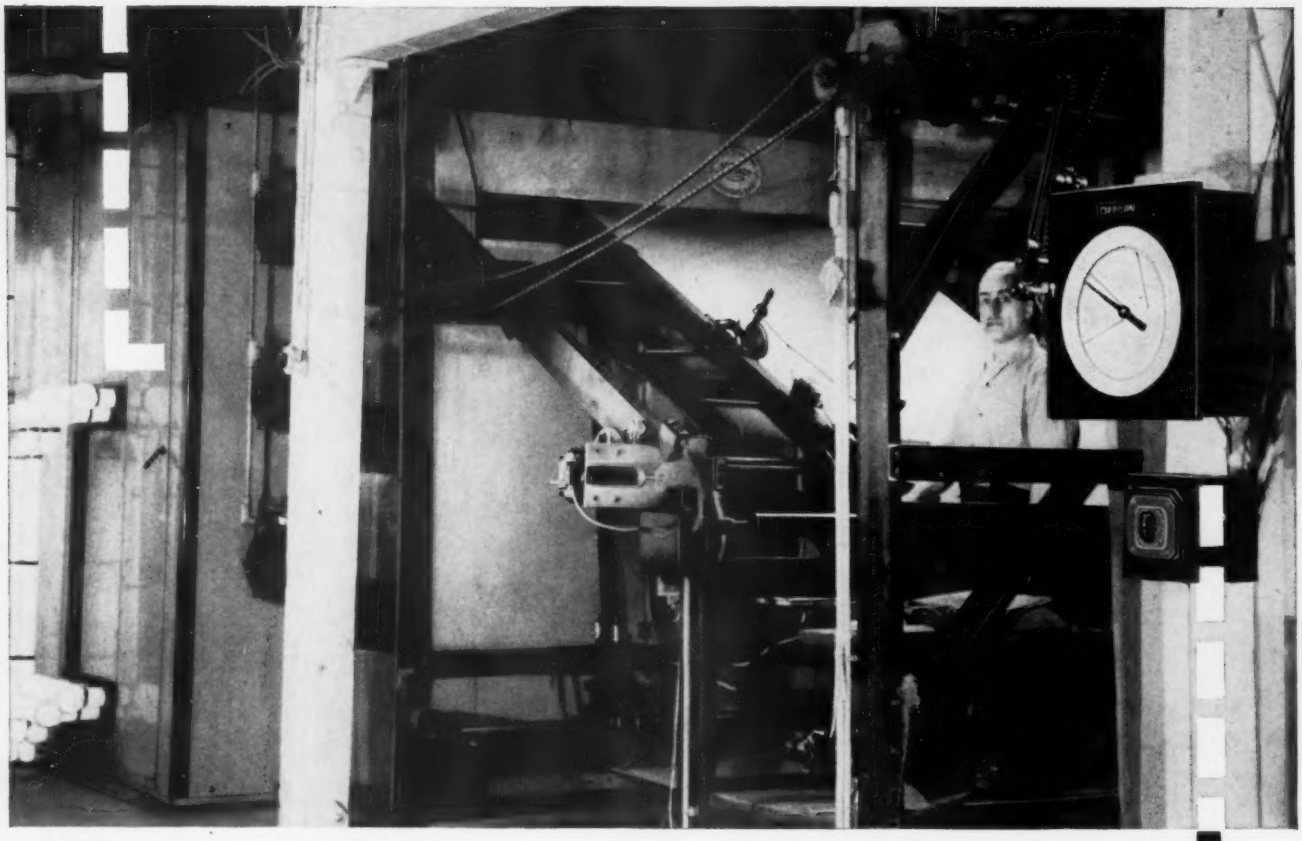
Address_____

City_____ Zone____ State_____

**For Canada and the British Commonwealth, Ionotrons are manufactured and distributed by Eldorado Mining & Refining (1944) Ltd., Ottawa, Ontario, Canada.*

Inside Facts

. . . increase dryer efficiency



ElectroniK control boosts production

Precision temperature control of dryers with the ElectroniK Instrument has proven even more advantageous than expected.

The ElectroniK Controller has made possible the elimination of baking and color change due to dryer operation. More important, it has improved finishing operations—provided for far better shearing.

The installation, shown above, at the Wyandotte Mills, Waterville, Maine, provides continuous dryer control with a switch for checking the all important temperature gradient throughout the dryer. These "inside facts" enable the operator to keep the dryer at top efficiency. Conditions caused by a slipping fan belt or improperly adjusted dampers are quickly detected. A convenient knob provides for easy changes in temperature control for goods of varying weight.

Add up the economies of higher production, better finishing and less rejectable goods. These economies can be realized in your mill at low cost with Brown ElectroniK Dryer Control.

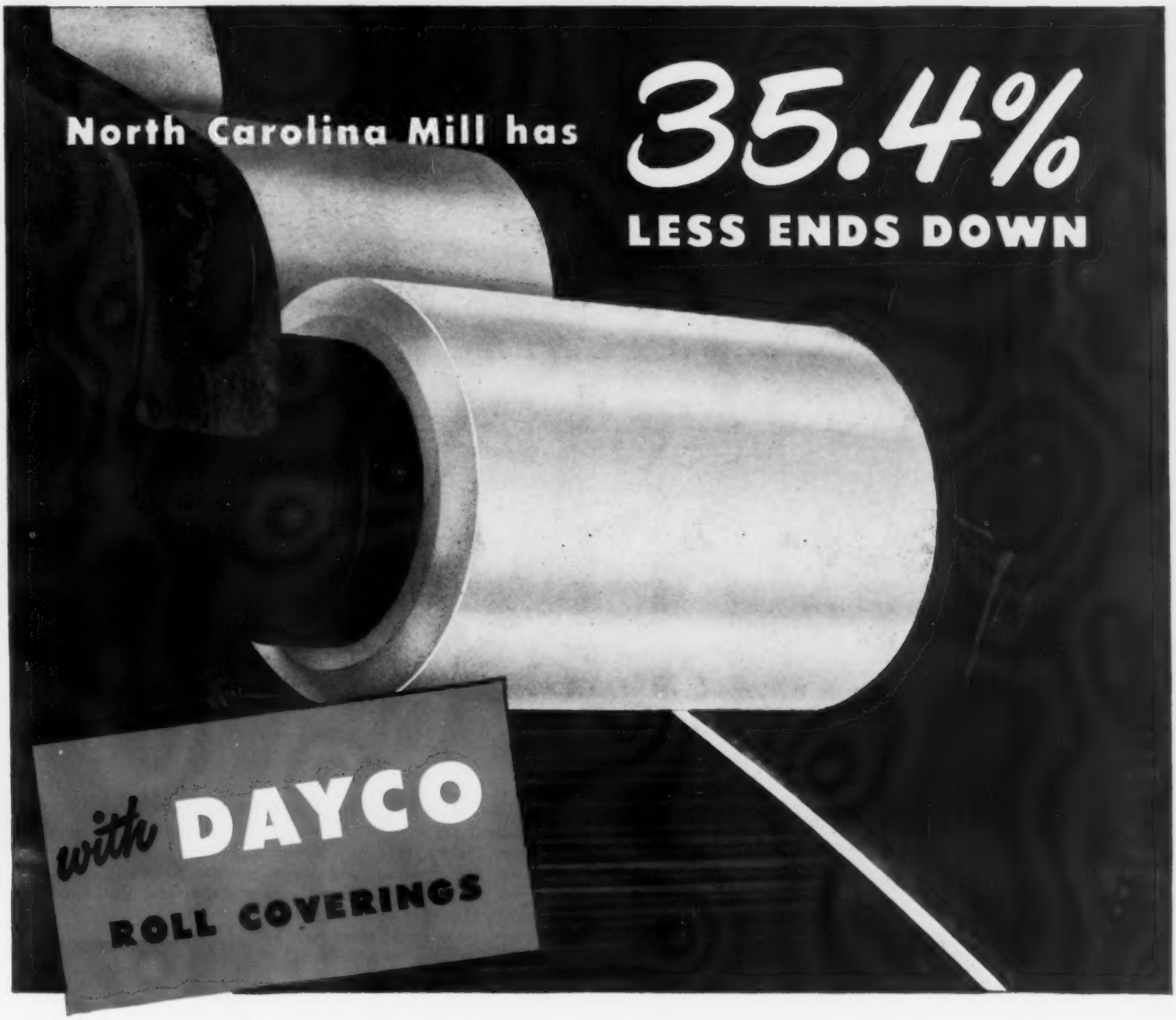
Write for complete information

THE BROWN INSTRUMENT CO., 4509 WAYNE AVE., PHILADELPHIA 44, PA.
DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR CO.

Offices in principal cities of the United States, Canada and throughout the world

BROWN *Advanced Instrumentation* **FOR BETTER PROCESSING**

Product of MINNEAPOLIS **Honeywell**



In a carefully conducted test in a big north central North Carolina mill, *Dayco* Roll Coverings outperformed a similar type roll covering on lapping, unclassed ends down and total ends down. In addition, *Daycos* did not eyebrow. The other roll coverings eyebrowed greatly.

There were 35.4% less ends down with *Dayco* Roll Coverings. This, despite the fact the *Dayco* test frame was located next to a window. The test was run on frames making 24/1 65% cotton and 35% acetate staple.

Dayco Roll Coverings outperform all other roll coverings in test after test because they are built with exactly the right amount of cushion and the correct coefficient of friction to assure perfect drafting properties. Too, *Daycos* are not affected by temperature or humidity conditions. Their superior physical properties remain constant throughout their long life. In fact, the characteristics of *Dayco* Roll Covering are such that *Dayco's* surface drafting properties improve with use.

It will pay you in increased production and better quality products to standardize on *Dayco* Roll Coverings and other textile machinery products. For complete information, write *Textile Products Div., The Dayton Rubber Company, Woodside Building, Greenville, S. C.*

Write today for your free copy of Dayco's new Cot Grinder bulletin, No. A-550.

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Go Lead for Acid Linings

When you want to line acid tanks or to cover equipment exposed to corrosive fumes or splash ... go for tried-and-true protection. *Go National for Lead!*

Lead resists acid... is easily worked, readily shaped to irregular contours... and can be "burned" to form continuous, corrosion-resistant surfaces.

National Lead brings you different types of lead to suit your conditions. Here are the three basic types:

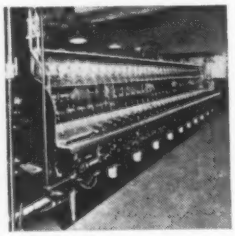
1 Chemical Lead: This is a practically pure lead, substantially free from bismuth and containing a small amount of copper, which boosts corrosion resistance and endurance limit. It has been used so successfully throughout industry that it is accepted as the standard lead for acid-handling. The other types of lead for industrial use are simply Chemical Lead alloyed with varying quantities of other metals to meet special service needs.

***"One-piece" linings** are obtained with lead. "Burning" the edges of each sheet together gives a continuous corrosion-resistant lining.*

2 Tellurium Lead: This is Chemical Lead to which has been added a small amount of tellurium. You get all of lead's regular advantages plus others needed for specific jobs. For example: one added feature of Tellurium Lead is its increased corrosion resistance at high temperatures.

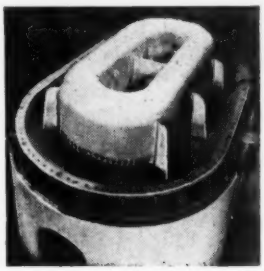
Another is its ability to work-harden. Mechanical stress, such as bending, stretching or hammering, actually *increases* Tellurium Lead's tensile strength and resistance to fracture.

Use of Tellurium Lead is recommended where you have to fight *both* stress and corrosion.



***Vibration or other fatigue stresses** won't weaken Tellurium Lead. Here, it's used as a protective covering on rayon spinning machines.*

3 Antimonial Lead: This is made from either Chemical or Tellurium Lead by alloying with small amounts of antimony to secure greater tensile and mechanical strength. 6% of antimony added to Chemical Lead almost doubles its tensile strength. This, plus greater stiffness, makes Antimonial Lead suitable where mechanical strain is severe or where linings are supported only by a skeleton framework.



Antimonial Lead also is harder and more resistant to abrasion and cutting. It's a good bet wherever erosion or physical abuse exists. However, as antimony lowers the melting point, we do not recommend Antimonial Lead for use above 240° F.

***Vacuum processing** demands a strong, stiff lead. That's why Antimonial Lead forms the large "cracker pipe" (center) of this partly assembled evaporator for coke by-products. Lead also lines the interior of the evaporator.*

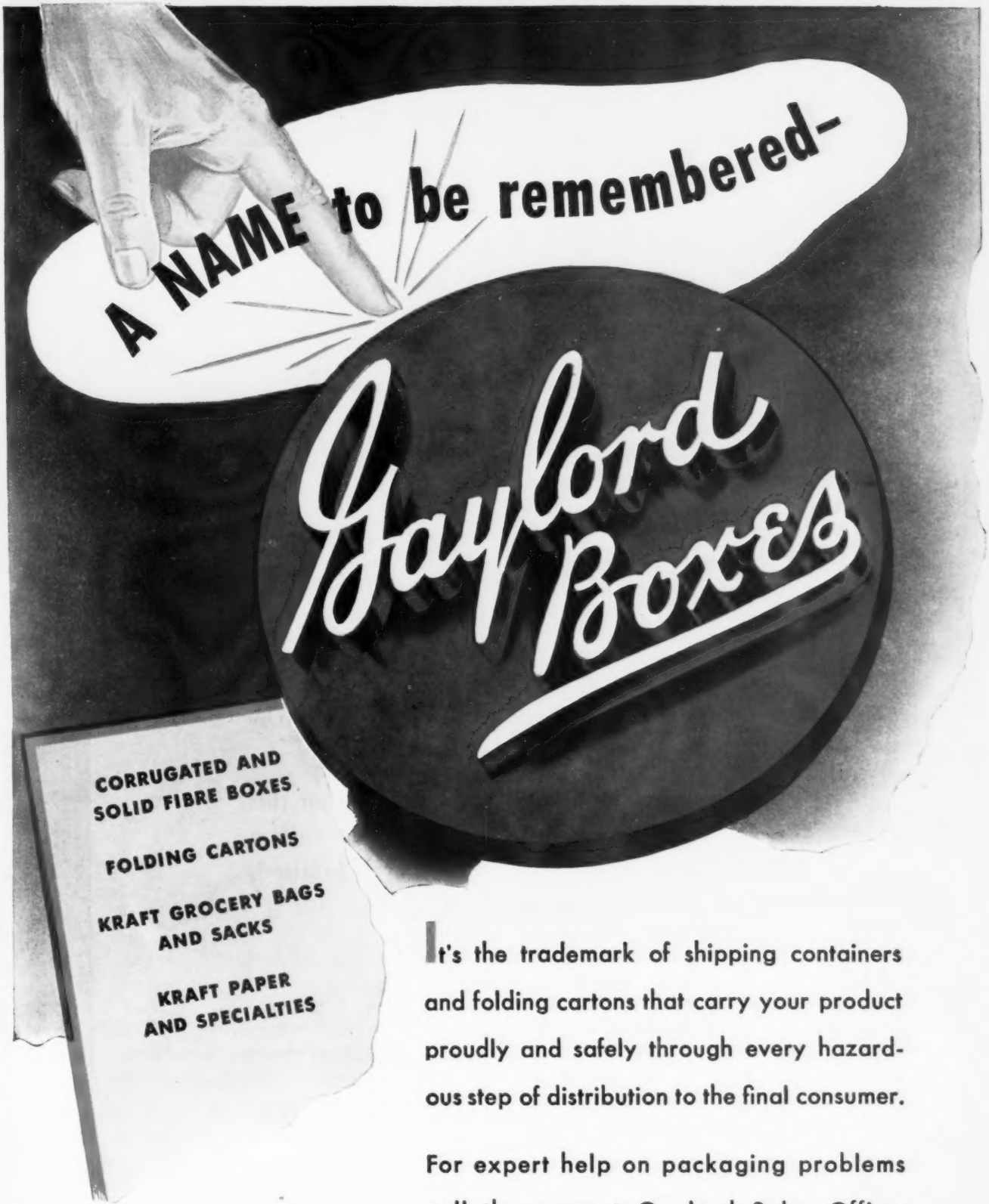
Go National for Lead

... pipe ... valves ... sheet ... lead-lined or lead-covered equipment ... even complete acid recovery plants. Behind every National Lead recommendation, every National Lead product, are years of experience and many important installations in every field handling corrosive liquids and gases.

NATIONAL LEAD COMPANY

111 BROADWAY, NEW YORK 6, N.Y.

Offices and Plants in Principal Cities
Pacific Coast: Morris P. Kirk & Son, Inc., Los Angeles
Canada: The Canada Metal Company, Ltd., Toronto



It's the trademark of shipping containers and folding cartons that carry your product proudly and safely through every hazardous step of distribution to the final consumer.

For expert help on packaging problems call the nearest Gaylord Sales Office.

GAYLORD CONTAINER CORPORATION, General Offices: **SAINT LOUIS**

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175

Announcing

100,000 TONS A YEAR
MORE DISSOLVING PULP

We take pleasure in announcing that we will have available 100,000 tons a year more dissolving pulp for our customers.

This additional tonnage will be provided from a new mill in the southern United States due to be brought into production early in 1950 by International Paper Company.

Technical services to our customers on this new tonnage will be provided as heretofore by Industrial Cellulose Research Limited, Hawkesbury, Ontario, Canada.

RIORDON
Sales Corporation Limited

SUN LIFE BUILDING MONTREAL, CANADA

Tenacell · Novocell · Plasticell · Phanecell

In knitting fine hosiery—
every detail demands attention

Particularly the Leg

BECAUSE women are paying more critical attention than ever before to the fine points of hosiery construction, good knitting is becoming increasingly important.

In the leg, particularly, fine knitting quality is essential because it helps to assure smooth fit and the uniformly sleek appearance so in demand. And Torrington Needles—the needles made and tested by special machine methods—help you achieve top quality knitting—not only in the leg—but in all the special features that sell hosiery and keep customers satisfied. Specify Torringtons for all your needle requirements!

THE TORRINGTON COMPANY, Torrington, Conn., U.S.A.

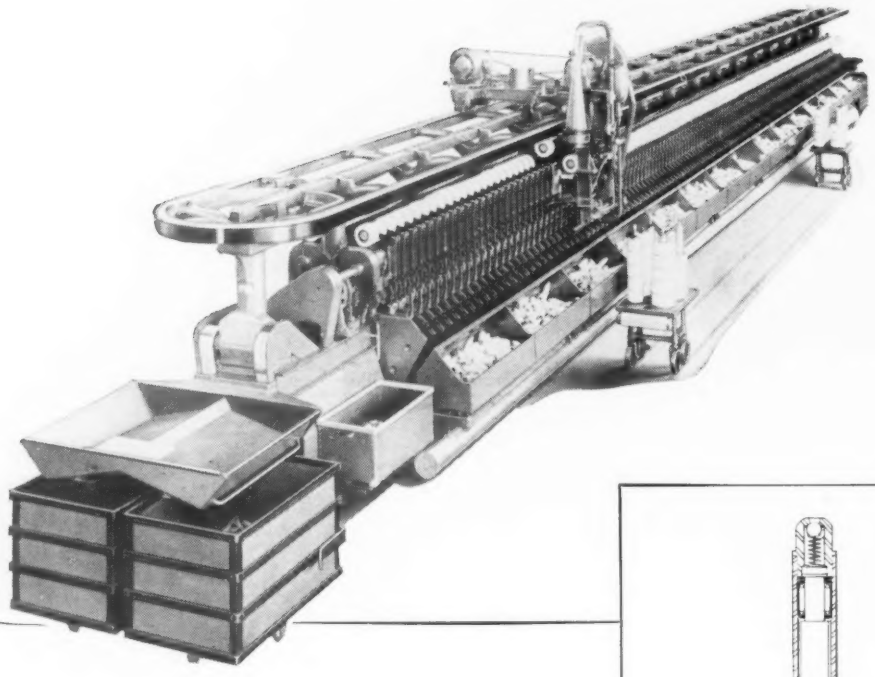
ESTABLISHED 1866

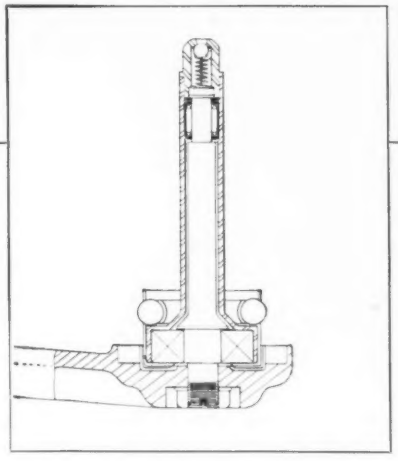
Branches: New York • Philadelphia • Chicago • Greensboro, N. C. Boston • St. Louis • Toronto, Canada. *Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Ave., Los Angeles 37, California Broadgate House, 7-10, Eldon Street, London E.C.2, England

TORRINGTON

SPRING BEARD NEEDLES • SINKERS • DIVIDERS • SPLIT DIVIDERS

Torrington Needle Bearings Reduce Friction and Wear in Barber-Colman Automatic Spoolers





X-section of Spooler cheese arm spindle shows how Barber-Colman secures efficient anti-friction operation in limited space through use of Needle Bearings in Automatic Spoolers.

...these compact anti-friction units prove ideally suited to space, speed and load requirements of textile machines.

The Barber-Colman Automatic Spooler operates at speeds from 900 to 1200 yards per minute. Uniform low tension under these high speed winding conditions is obtained by many mechanical improvements, including the use of Torrington Needle Bearings.

These efficient anti-friction units reduce friction and wear. Long service life and maintenance of precise operation result. The unusually high unit capacity of Torrington Needle Bearings enables them to handle heavy cheeses with an unusually compact, space- and weight-saving design. Efficient retention of lubricant reduces oil leakage and prevents soiling of yarn.

These and other advantages secured in Barber-Colman Spoolers, Warpers and Bobbin Winders can be engineered into your equipment, too, through the use of Torrington Needle Bearings. Call on the specialized experience of Torrington's engineers.

THE TORRINGTON COMPANY
Torrington, Conn. • South Bend 21, Ind.
District Offices and Distributors in Principal Cities

TORRINGTON *NEEDLE* **BEARINGS**

NEEDLE · SPHERICAL ROLLER · STRAIGHT ROLLER · TAPERED ROLLER · BALL · NEEDLE ROLLERS

NEW Westinghouse 85-WATT FLUORESCENT LAMP EQUALS OUTPUT OF 100-WATT LAMP

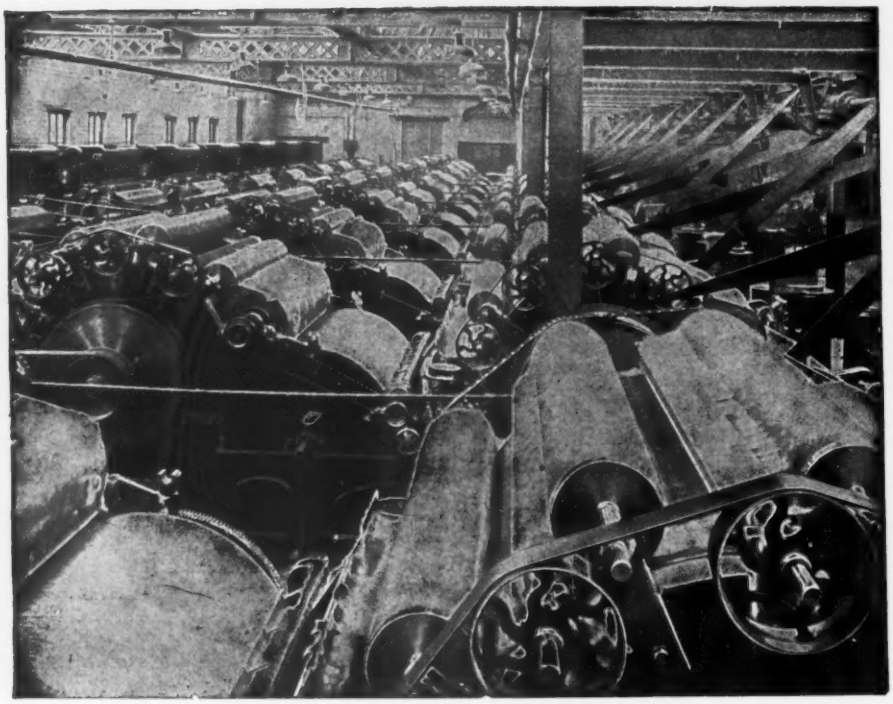
USE OF KRYPTON GAS INCREASES EFFICIENCY 17%; NEW LAMP OPERATES IN PRESENT 100-WATT FIXTURES

This new Westinghouse lamp produces 49.5 lumens per watt, as compared with 42 lumens per watt for the 100-watt lamp which it replaces. The new unit has an average life of 6,500 hours at 12 hours per start.

The 85-watt fluorescent lamp is five feet long, 2⅛ inches in diameter, and offered in five hues of white light—daylight, 4500 degree white, standard white, soft white, and the new warm white. For more information about this new money-saving lamp, call your Westinghouse Lamp Distributor or write to Lamp Division, Westinghouse Electric Corporation, Bloomfield, New Jersey.

YOU CAN BE SURE... IF IT'S Westinghouse
the name you know in LAMPS

PLATT'S
WORSTED CARDING ENGINES



Panoramic view of a layout showing Worsted Carding Engines in operation.

Machines constructed in the greatest variety suitable for all types of Wools.

- ***RIGID CONSTRUCTION***
- ***EASE OF ADJUSTMENT***
- ***MAXIMUM PRODUCTION***

Prince·Smith & Stells Ltd.
INCORPORATING TAYLOR WORDSWORTH & Co LTD
CONCESSIONAIRES FOR ALL WORSTED MACHINERY MANUFACTURED BY PLATT BROTHERS & CO. LTD. ASA LEES & CO. LTD.
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***Agents*, U. S. A. and Canada—English system machinery. Atkinson, Haserick & Co., 21 Congress St., Boston 6, Mass. *Agents*, U. S. A.-French system machinery, The Blake Electrical Mfg. Co., 178 Atlantic Ave., Boston 10, Mass.**

H&D BOXES

These corrugated packages reduce distribution costs, increase dealer good will, influence customer acceptance. They protect the merchandise in transit, are easy to pack, simplify inventory, save space, display well, facilitate identification and selection, lend themselves to successful merchandising, effectively promote the manufacturer's name. Yes, such a package definitely makes a good product better. Consult the H & D Package Laboratory on ALL packaging problems.

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decrease SHUT-DOWNS!

A

UNBRAKO

Reg. U. S. Pat Off

KNURLED SELF-LOCKING Square Head Set Screws

B

The "Unbrako" SELF-LOCKING Square Head Set Screws, as shown, are "real fasteners" . . . they positively *will not* shake loose! A loose "fastener" *invariably causes* shut-downs, *invariably* causes loss of production, and *invariably causes* increased maintenance, all of which cost money—each of which these "Unbrako" Screws absolutely prevent. Why?—because of the popular "Unbrako" Knurling feature—which is incorporated on the internal cup point (A), and on the external cup point (B) . . . making these "Unbrako" Square Head Set Screws SELF-LOCKERS.

If and when the head of an "old style" square head set screw twists off, just to get it out costs many times the price of the screw these days . . . especially if it's in an awkward place! But the "Unbrako" Square Head Set Screw, made of a special alloy steel, is a "brute" for strength—it's practically *impossible* to twist its head off,—thus, helping to reduce the cost of maintenance materially.

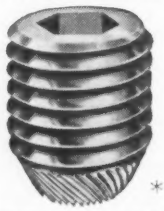
Write us for the name and address of your nearest "Unbrako" Industrial Distributor and for your copy of the "Unbrako" Catalog.

Knurling of Socket Screws originated with "Unbrako" in 1934.

"HALLOWELL" KEY KIT

You can't tighten or loosen socket screws without a hex socket wrench, so why not get our #25 or #50 "Hallowell" Hollow Handle Key Kit which contains most all hex-socket bits.

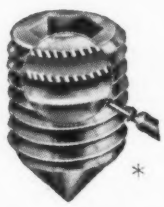
"UNBRAKO" SOCKET SET SCREW WITH KNURLED CUP POINT



"WON'T SHAKE LOOSE"

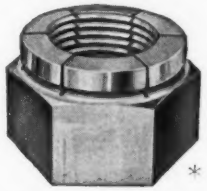
The Knurled Cup Point of the "Unbrako" Socket Set Screw makes it a Self-Locker—positively will not shake loose—even when subjected to extreme vibration! "Unbrako" Socket Screw Products are available in Stainless Steel and other metals or metal alloys.

"UNBRAKO" SOCKET SET SCREW WITH KNURLED THREADS



The Knurled threads of this UNBRAKO "Won't Shake Loose" Socket Set Screw make it a Self-Locker, too, for use where the point does not lend itself to knurling.

"FLEXLOC" SELF-LOCKING NUTS



"WON'T SHAKE LOOSE"

Because it is one-piece, all-metal, full-threaded and resilient . . . and, because it is a rugged "Stop", "Lock" and "Plain" nut all in one—processed to have an exceptionally uniform torque and long life,—the "Flexloc" is becoming widely accepted. Request samples.

*Pat'd and/or Pats Pend

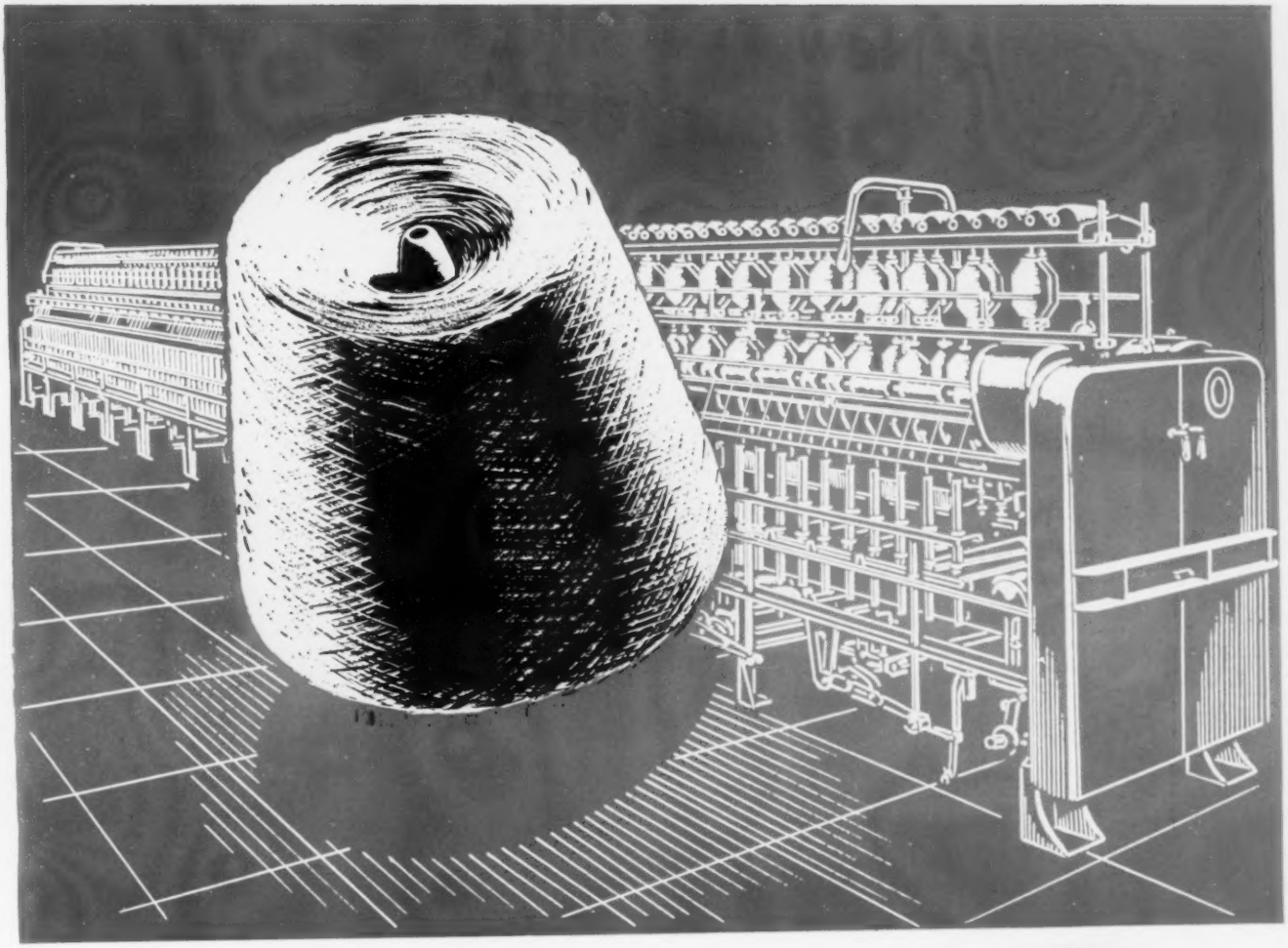
OVER 45 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNSYLVANIA, BOX 571

BRANCHES: CHICAGO DETROIT INDIANAPOLIS ST. LOUIS SAN FRANCISCO

YES! Tycol Alweave Textile Spindle Oils perform better . . . BETTER . . . BETTER



Tycol Alweave Textile Spindle Oils perform better, because:

. . . *Tycol Alweave Textile Spindle Oils* are highly refined, light colored, low viscosity oils recommended for spindles, where speeds of 7500 R.P.M. or higher are obtained.

. . . *Tycol Alweave Textile Spindle Oils* are known for their high resistance to oxidation and ability to maintain body under high temperature.

. . . *Tycol Alweave Textile Spindle Oils* reduce bolster losses, eliminate spindle drag and thread breakage.

For further information about Tycol Alweave Textile Spindle Oils and the rest of Tycol's "engineered lubricant" line, write, wire or phone your nearest Tide Water Associated Office.

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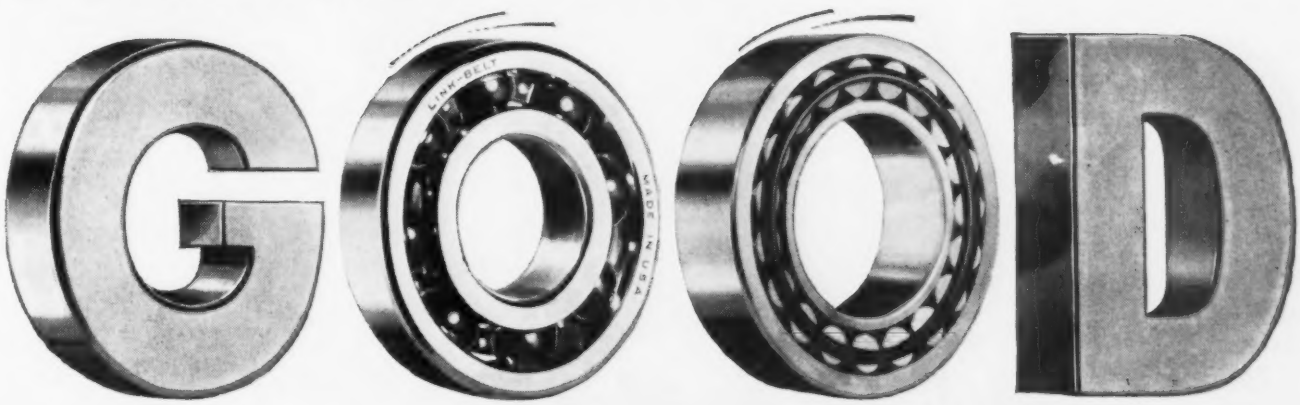
TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE - NEW YORK 4, N.Y.

LUBRICATION—"ENGINEERED TO FIT THE JOB"

A New Year's message to our friends
As a difficult year draws to a close we take this opportunity to express appreciation to our many customers for their business and for their patient understanding.
The unbelievable demand for steel created an almost insurmountable problem for the industry.
We tried to meet this situation to the best of our ability. New warehouses increased our facilities in 1948 and further improvements are planned for 1949. We are now at your service from coast to coast, determined to serve you better.
Meanwhile, let us extend our sincere best wishes for a happy holiday season and a successful New Year.
UNITED STATES STEEL SUPPLY COMPANY
BALTIMORE · BOSTON · CHICAGO · CLEVELAND · LOS ANGELES · MILWAUKEE
NEWARK · PITTSBURGH · ST. LOUIS · SAN FRANCISCO · TWIN CITY (St. Paul)
UNITED STATES STEEL SUPPLY COMPANY
USS
STEELS
SERVICE

A STATEMENT OF FACT

LINK-BELT BALL and ROLLER BEARINGS are GOOD BEARINGS



Yes, they've got to be good! They've got to have what it takes to carry the load . . . to handle the tough jobs as well as the easy ones . . . to roll smoothly and dependably under widely-varying operating conditions . . . to perform with complete "service-satisfaction" over a long period of time.

Once these dependable, precision-built bearing units are installed on your equipment, you'll join thousands of other satisfied users in this simple statement of fact — LINK-BELT BALL and ROLLER BEARINGS are GOOD BEARINGS.

LINK-BELT BALL AND ROLLER BEARINGS

Send for Catalogs!

LINK-BELT COMPANY

519 N. Holmes Ave. • Indianapolis 6, Indiana

STOCKS IN PRINCIPAL TRADING AREAS

11,150

Lighter Weight

HAYES
ALUMINUM AND MAGNESIUM
LOOM BEAMS

plus

greater strength, higher machine speeds, easier handling

The light metal construction of Hayes Aluminum and Magnesium Loom Beams provides the textile industry with certain definite advantages. Foremost among these is the greatly reduced weight, which is one-half as much as the conventional loom beam. Despite this lightness, Hayes Loom Beams retain the full measure of strength. Beams equipped with thirty-two inch heads permit greater yarn loading and as much as six months weaving time. They may also be obtained in head diameters as small as twenty inches. Hayes Loom Beam heads are designed to have the least possible deflection even when loaded with fine denier acetate yarn. Barrel and head faces are machined to the closest tolerances for accuracy, and have polished, smooth surfaces for protection against catching and breaking the warp. Loom beams are produced with in between head dimensions to suit the Manufacturers' specifications.

Write or wire today for full information on Loom Beams, Tricot Beams and Section Beams. Ask for Catalog 1-21.

HAYES INDUSTRIES, INC.
HOME OFFICE: JACKSON, MICHIGAN, U. S. A.

BOTH WASH AND LIGHT FASTNESS ARE COMBINED IN —

COPRANTINE *Colors*

The Coprantine Colors are a new class of substantive dyestuffs. They give, by the usual direct color procedure, dyeings on vegetable fibres, which when aftertreated, combine with copper salts to form exceedingly stable, complex compounds of excellent fastness to both light and washing.

APPLICABLE TO:

- **VISCOSE RAYON**
- **COTTON**
- **WOOL BLENDS**
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IN YARNS, HOSIERY, KNIT GOODS AND WOVEN FABRICS.

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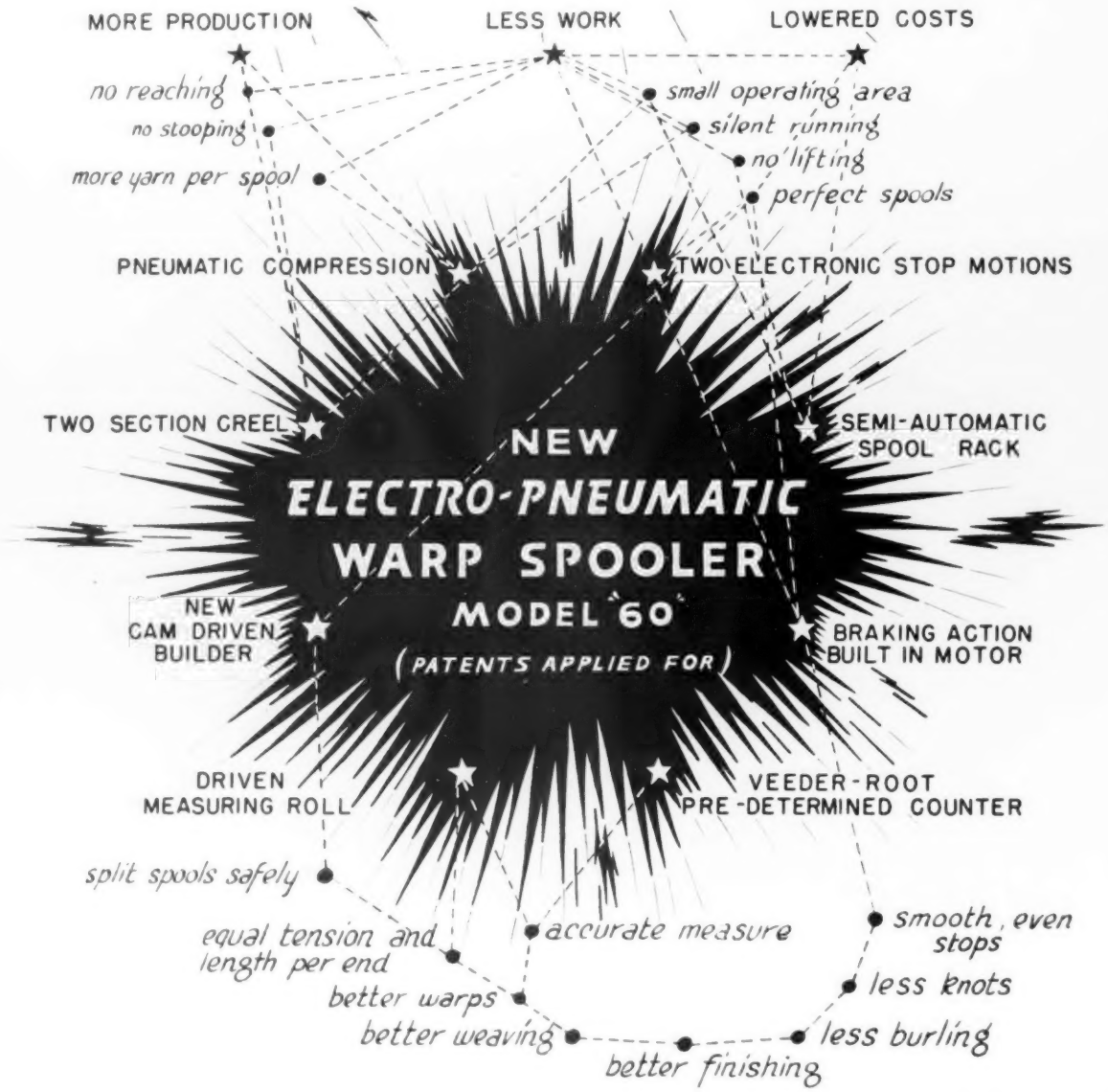
VAT DYES OF THE DOW CHEMICAL CO.

Chain Reaction Created by the

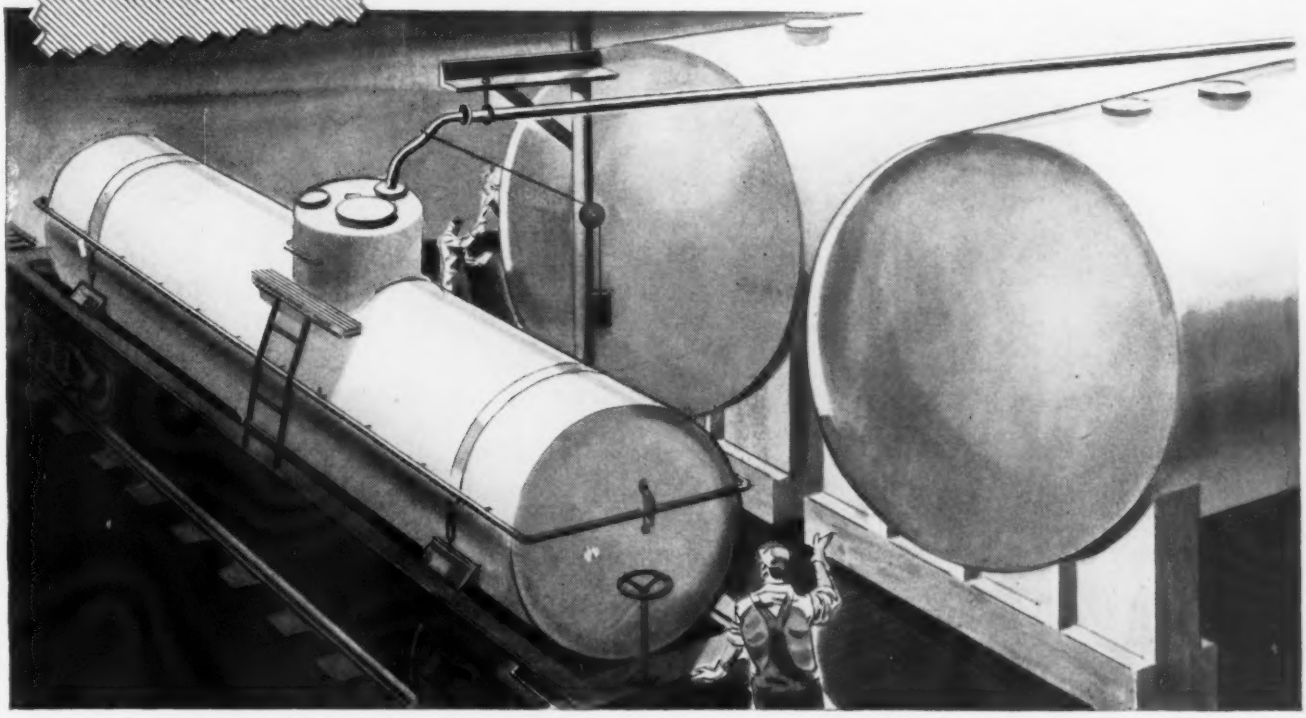


WRITE FOR DETAILS

DAVIS & FURBER

NORTH ANDOVER, MASS.

CONTINUOUS BLEACH . . . it's only as good as the tanks it's stored in . . .



KEEP YOUR BLEACH AT FULL STRENGTH . . .

insist on tanks of
ALCOA ALUMINUM

The men who make hydrogen peroxide know it can be as skittish as a colt. That's why they ship it in tank cars of Alcoa Aluminum. Aluminum doesn't promote the decomposition of peroxide. The oxygen stays where it belongs—in the bleach, which remains at full strength.

That means every dollar's worth of peroxide does its full day's work. Besides, aluminum's corrosion resistance means no streaking of yarns as the result of red rust from tank metal. Tanks of Alcoa Aluminum are the lowest cost, corrosion-resistant tanks you can buy.

Alcoa has the facilities and experience to build peroxide tanks to your specifications—and deliver Alcoa-made tanks promptly. Or ask your tank builder to take advantage of Alcoa Aluminum and Alcoa engineering help. Call your nearby Alcoa sales office, or write ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh 19, Pennsylvania.

Alcoa Aluminum for other mill operations, too!

Pipe and fittings of Alcoa Aluminum help keep peroxide at full strength, help prevent discoloration.

Slasher hoods of Alcoa Aluminum stay bright and clean, resist corrosion, don't discolor materials.

Separators for spinning frames and twisters help promote smoother operation because of decreased load on ring rails.

Warp beams and loom beams, new or replacement, are dimensionally stable, don't warp or splinter.

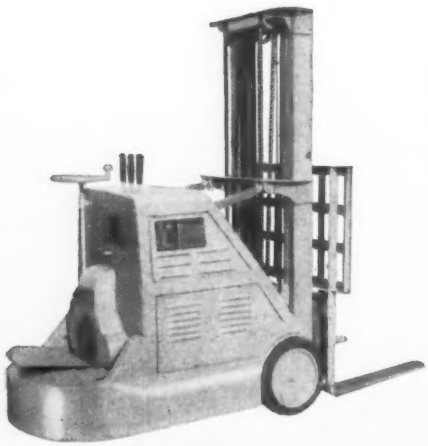
Here, and dozens of other places, Alcoa Aluminum can speed production, reduce waste, help you save money because it's strong, light in weight, corrosion-resistant.

ALCOA® FIRST IN ALUMINUM

ALCOA ALUMINUM 1888 1948 60 YEARS OF SERVICE

MOBILIFT a top hand at cutting handling costs

Most executives agree that material handling costs are too high. That is why so many industries have a pleasant surprise when they are introduced to the "Mighty Midget." They find that Mobilift's tremendous savings lower the point at which they can "break even" on production.



Mobilift is gasoline-powered for full-time, heavy duty service. Its compact design and short turning radius enables it to work in crowded areas. The fact that it has no gears to shift speeds operation—insures more trips per hour, more tonnage per day and less cost per job.

Plant executives who have felt they were not prospects for a lift truck report big savings once a Mobilift operation is installed. Regardless of how you now handle materials it will pay you to check up on Mobilift. Sign the coupon below and get the whole story on the thrifty "Mighty Midget."

MOBILIFT CORPORATION
835 S.E. Main St., Portland 14, Oregon

Please send me your illustrated folder on Mobilift operation.

Name_____

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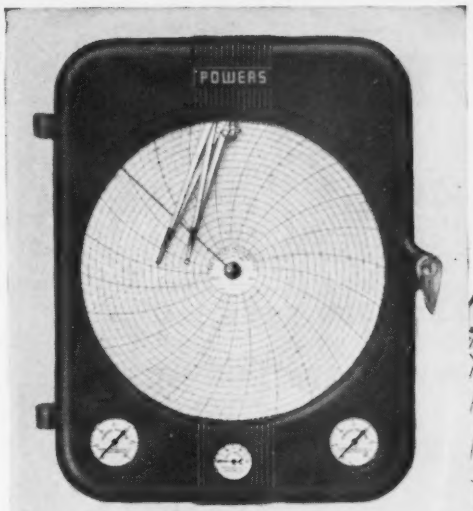
MOBILIFT
"The MIGHTY MIDGET"

DISTRICT OFFICES
ATLANTA LONG ISLAND CITY, N. Y. CHICAGO
SAN FRANCISCO DALLAS LOS ANGELES



POWERS WET and DRY BULB RECORDER REGULATOR

Want More Accurate HUMIDITY Control?

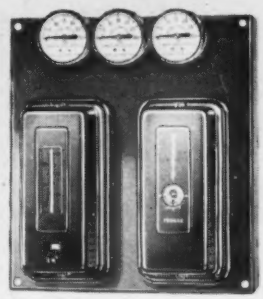
Above ROOM HYGROSTAT for Concealed Piping

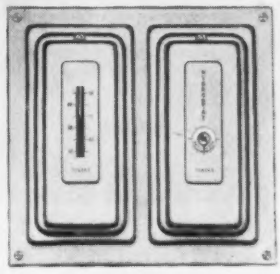
At Left ROOM HYGROSTAT for Exposed Piping • Above DUCT HYGROSTAT

At Right HYGROSTAT and THERMOSTAT COMBINATION for Exposed Piping

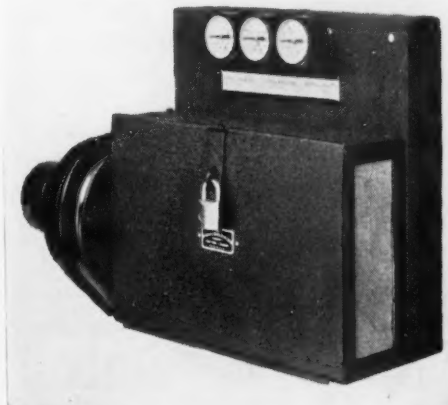
•

Below HYGROSTAT and THERMOSTAT for Concealed Piping





Below—Powers Aspirator Box containing Hygrostat and Thermostat over which is drawn, by suction fan at left, a stream of air filtered by fine screens. Widely used in Textile Mills and suitable for other industries.



Only a few of our many different types of Humidity Controls are shown here. For further information phone or write our nearest office.

HY2

POWERS Type 190 HYGROSTATS

may help solve one of your difficult problems

POWERS new type 190 Hygrostat is pneumatically operated and sensitive to the slightest changes in relative humidity. Users state "it is the most accurate hygrostat made."

Controls valves or dampers in connection with heating or cooling coils, humidifiers, air washers, humidifying atomizers, spray nozzles, etc.

Used in processing and storage rooms in textile mills, industrial plants, laboratories, printing plants, telephone exchanges, and comfort air conditioning systems in all types of buildings.

Use these modern hygrostats to replace obsolete or inaccurate controls.

Points of Superiority: 1. Precise control and quick acting response to slight changes in relative humidity. 2. Reliable operation and maintenance of calibration over long periods of time. 3. Modern design, compact and efficient. 4. Sensitivity adjustment. 5. Unusual resistance to vibration. 6. Requires a very small amount of compressed air for its operation. 7. Easy to install.

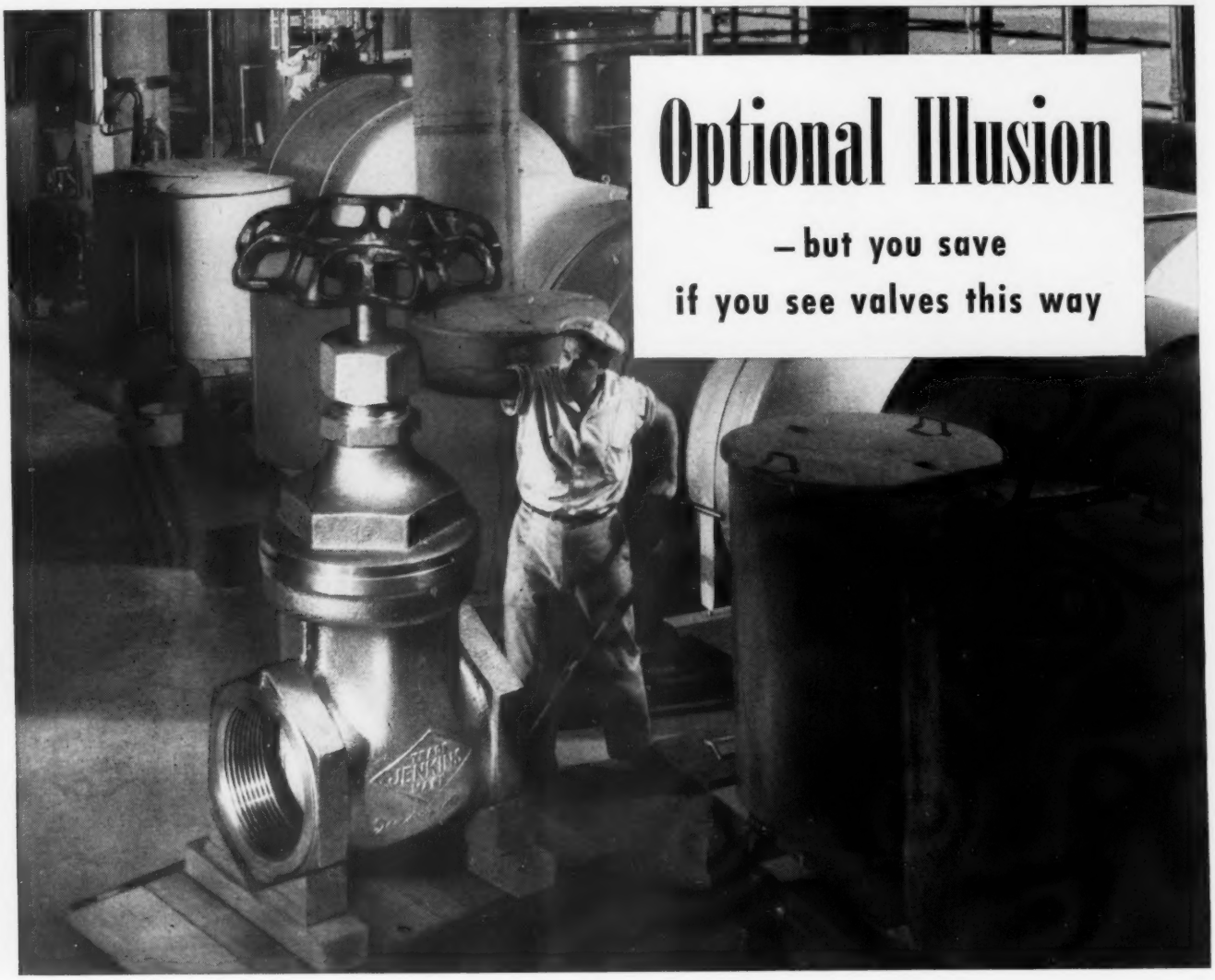
Phone or write our nearest office for Bulletin 302

ATLANTA 3, GA., 142 Spring St., N.W. • BOSTON 15, MASS., 125 St. Botolph St. • GREENSBORO, N. C., 1034 Jefferson Standard Bldg. • NEW YORK 17, N. Y., 231 East 46th Street • PHILADELPHIA 32, PA., 2240 N. Broad St. • CHICAGO 14, ILL. 2720 Greenview Ave. • LOS ANGELES 5, CAL., 1808 Eighth Street.

THE POWERS REGULATOR CO.

OFFICES IN 50 CITIES • SEE YOUR PHONE BOOK

Over 55 Years of Temperature and Humidity Control



THERE ARE TWO WAYS of regarding the valves in your plant. You can think of the relatively small cost of a single valve, and dismiss them as a minor, "petty cash" investment. Or, you can think of *all* valves in your plant as *one* valve, as pictured, by photo-magic, in this pharmaceutical plant,—and see them in proper perspective.

YOU'LL FIND IT PAYS to take the latter view, for in *any* plant, *any* building where fluid control is involved, valves, collectively, are as important, in terms of investment and operating expense, as larger plant units, and should be selected with the same sharp eye to quality and economy.

EXCESSIVE MAINTENANCE of one inferior valve is insignificant, but multiplied by thousands, it is a serious drain on operating budgets. JENKINS BROS. helps you meet this problem two ways. First, by building extra endurance into Jenkins Valves, making them the longest-lasting, lowest-upkeep valves that money can buy. Second, with advice from Jenkins Engineers on any question of proper selection, installation, or maintenance.

For all new installations, for all replacements, rely on Jenkins quality and engineering for lowest valve costs in the long run. *Sold through leading Industrial Distributors.*

•

Jenkins Bros., 80 White St., New York 13; Bridgeport, Conn.; Atlanta; Boston; Philadelphia; Chicago; San Francisco. Jenkins Bros., Ltd., Montreal.

"PRACTICAL PIPING LAYOUTS" is a 32-page book containing diagrams and descriptions of 25 basic piping layouts with complete recommendations for valve selection and location in the lines. Tells you "which valve where for best performance". FREE on request. Write JENKINS BROS., 80 White Street, New York 13, N. Y.

LOOK FOR THIS TRADE JENKINS MARK DIAMOND MARK

SINCE 1864 Jenkins Bros

JENKINS VALVES

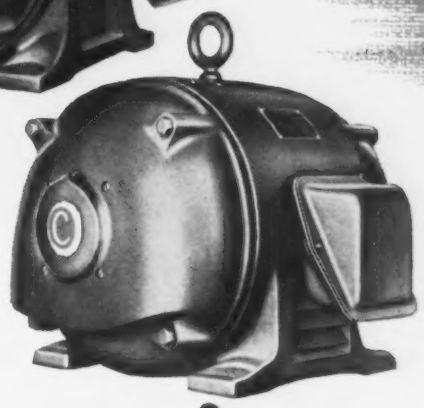
Types, Sizes, Pressures, Metals for Every Need

For Motor Protection That Keeps Machines Running

Use 1 of These 4 Century Motor Types

The four types of Century motors shown here are designed to resist the dangers of hazardous atmospheres as described below. As a result they keep machines operating, keep shutdowns to a minimum.

Form J — open rated, general purpose motor — meets the needs for most installations where operating conditions are relatively clean and dry. The top half of the motor frame is closed to keep out falling solids or dripping liquids.



Splash Proof motor — gives the necessary protection where plants must be washed down — keeps water out of the motor even when a hose is applied directly on the frame. It also provides protection against rain, snow, sleet, and ice for outdoor installations.

Totally Enclosed Fan Cooled motors — protect against grain dusts, mist, or fog that would destroy the vital operating parts of the motor. The inner frame protecting the motor is sealed to keep out harmful matter.

Explosion Proof motors — protect against atmospheres charged with explosive dusts or gases. See specifications for specific kinds of explosive hazards.

Century builds a complete line of electric motors in sizes from 1/6 to 400 horsepower to meet the requirements of industrial and commercial needs.

Specify Century motors for all your electric power requirements.

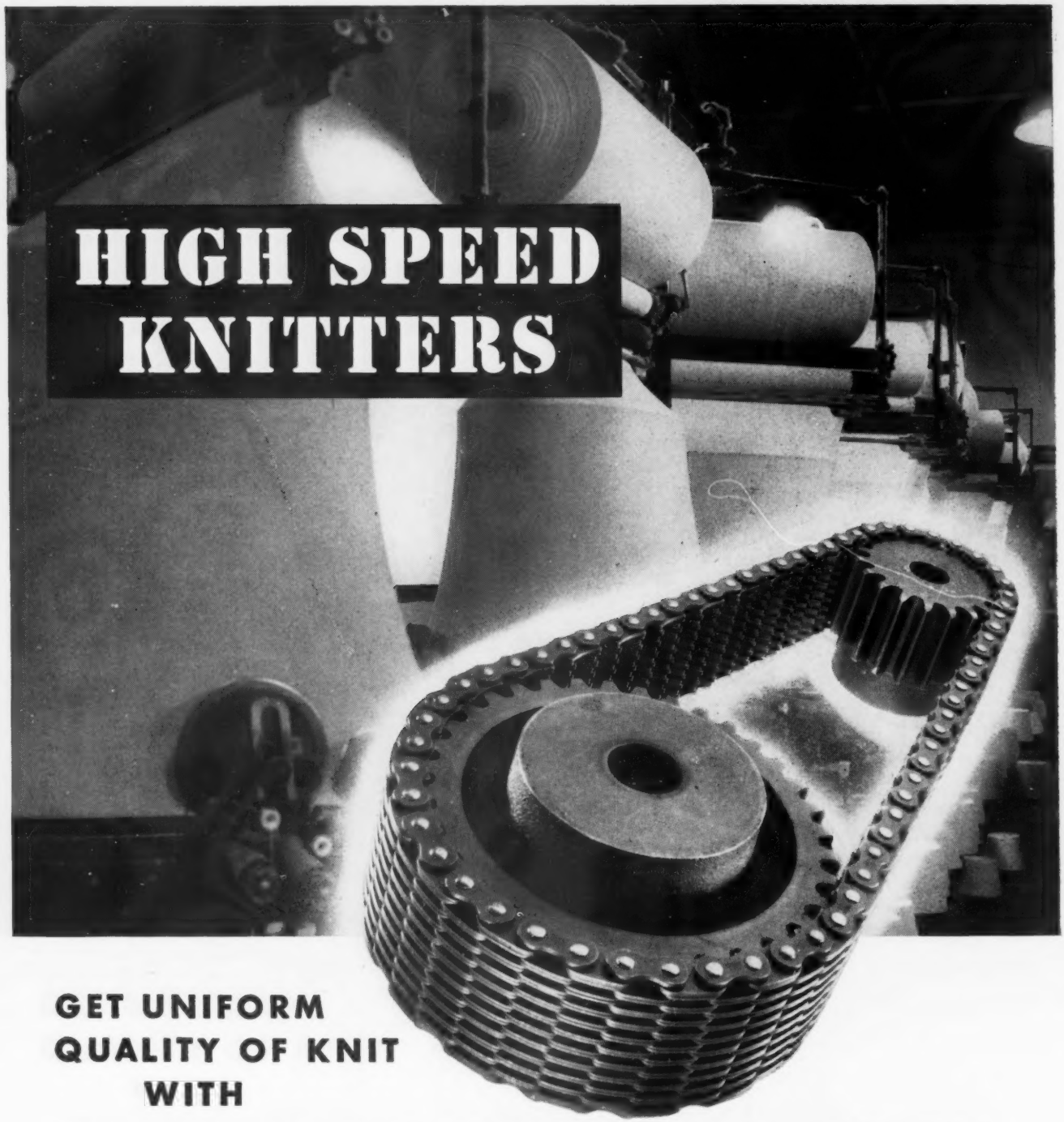
Century C MOTORS

CE-1099

CENTURY ELECTRIC COMPANY

1806 Pine Street • St. Louis, 3 Mo.

Offices and Stock Points in Principal Cities



GET UNIFORM QUALITY OF KNIT WITH

WHITNEY SILENT CHAIN

Regardless of the type of knitting machines you manufacture or use, Whitney Silent Chains will help your equipment to maintain uniform quality of products by transmitting smooth, constant power.

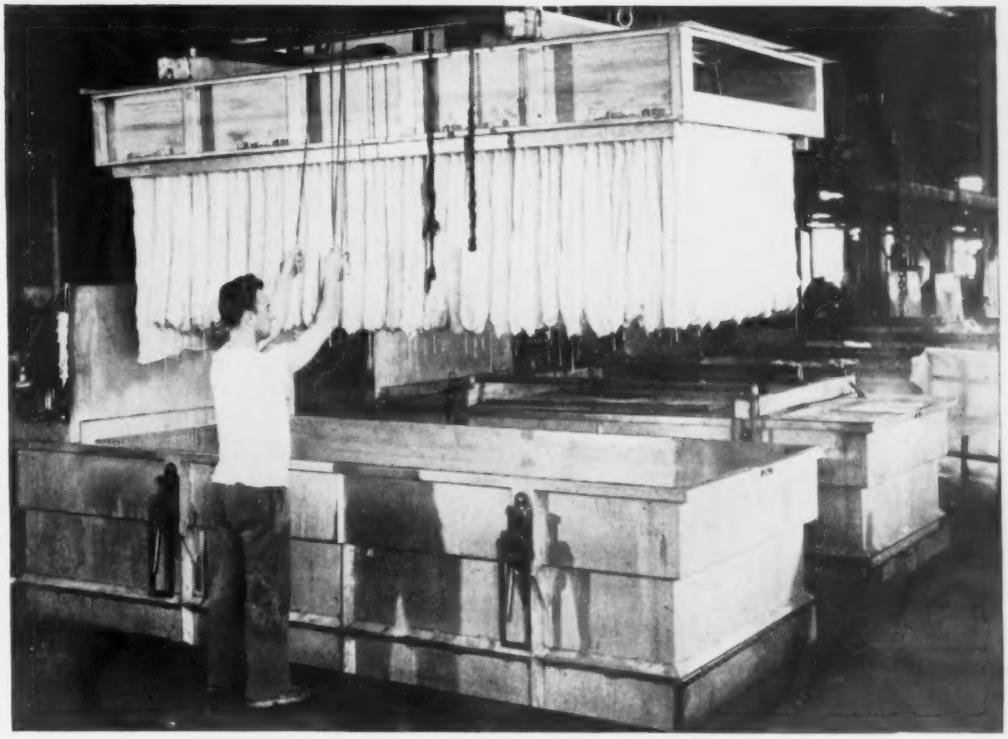
The positive grip of Whitney Silent Chains delivers full power from driver to driven mechanisms. Because there is no slippage or friction loss, product uniformity is assured . . . rejects and "seconds" are reduced to a minimum. Whitney Silent Chains absorb shock loads without breakage . . . give long life with low maintenance.

Whether you manufacture knitters, looms, cards, printers, or other textile machinery, it will pay you to use Whitney Silent Chains. If you are a user of textile equipment, replace old chains with Whitney Silent Chains and Cut Tooth Sprockets for dependability and performance. Write for information.

Whitney Chain & Mfg. Co. 211 Hamilton Street, Hartford, Conn.
Division of Whitney-Hanson Industries Inc.

"STAINLESS STEEL holds colors 'true'..."

—say yarn dyers



Shades can be changed rapidly in these all-stainless steel yarn dyeing machines with no effect on brightness of color. Tanks, covers, racks and dye sticks all are stainless steel. Other uses for ENDURO include cans, reels, saturators, bleaching equipment, continuous dyeing equipment, hosiery forms and many more.

• Delicate colors consistently come right and bright from dyeing equipment made of Republic ENDURO Stainless Steel. Shades are identical with those developed under laboratory conditions, because ENDURO offers a natural immunity to dye bath chemicals and bleaches.

Moreover, changes from dark to light shades can be made lightning-fast with no danger of color carry-over—because ENDURO is so easy to clean . . . quickly and *completely.* Its remarkable resistance to rust and corrosion forestalls any chance of color spoilage from those sources. And, it needs no plating, painting or other protective coating . . . it's solid stainless steel all the way through.

True colors . . . pure bleached whites . . . fast color changeover . . . minimum maintenance . . . are just a few of ENDURO's many advantages in textile applications. Booklet 444 has complete factual information. Write for your free copy.

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

REPUBLIC STEEL

Enduro Reg. U. S. Pat. Off.

STAINLESS STEEL

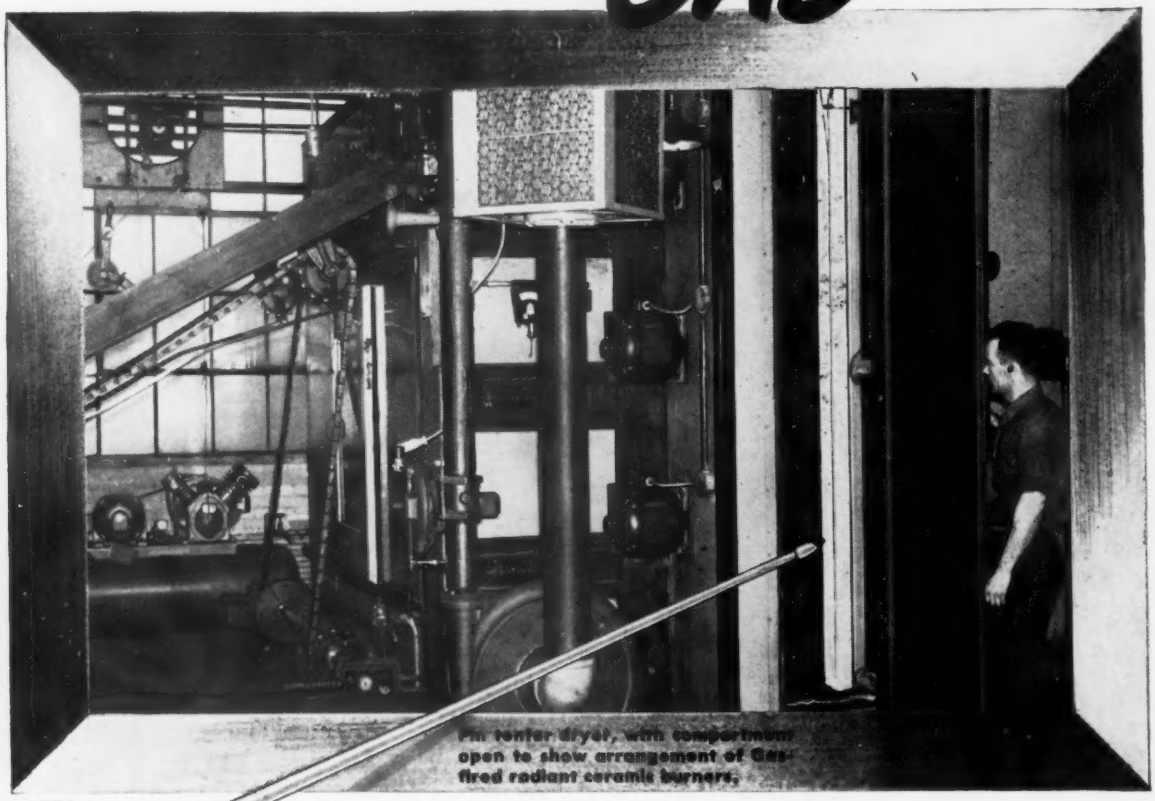
RESISTANT TO RUST AND CORROSION • RESISTANT TO HEAT • HIGH IN STRENGTH • EASY TO FABRICATE
EASY TO CLEAN • FREE FROM CONTAMINATION • EYE APPEALING • LONG LASTING • LOW ULTIMATE COST

A PRODUCT OF REPUBLIC STEEL

GUILD · NORTHLAND MILLS

Increases Capacity and Utility of Pin Tenter Dryer with

Radiant GAS Burners



Pin tenter dryer, with compartment open to show arrangement of Gas-fired radiant ceramic burners.

MODERNIZATION of existing equipment is a logical step to meet the demand for increased production. And, in modernizing heat processing equipment, the advantages of GAS and modern Gas Equipment have been proved in thousands of installations.

When confronted with the need for increased drying speeds in a pin tenter dryer the engineers at Guild-Northland Mills, Laconia, New Hampshire, installed radiant Gas-fired ceramic burners in the drying chamber. This simple installation provides automatic control of temperatures up to 450° with complete safety.

In this installation the flexibility of GAS is emphasized by the comments of Guild-Northland Superintendent G. E. BonDurant—"**The Gas-fired equipment not only increased the drying capacity of our pin tenter but also gives us the temperatures and drying speeds necessary for curing special resin finishes.**"

Wherever heat is required in textile processing —for slashing, drying, polymerizing, and other operations—there's a task for GAS and modern Gas Equipment. You'll find it worthwhile to investigate the advantages of GAS for textile productioneering.

Photos Courtesy of RED-RAY Manufacturing Company, Inc., New York City, Manufacturers of Gas-fired Radiant Ceramic Burners.

MORE AND MORE...

THE TREND IS TO GAS

FOR ALL INDUSTRIAL HEATING

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

The Day All The Babies Cried

Bill Cameron built up his small, one-room dairy into a plant employing more than fifty people. The town grew—but not as fast as you would think from the way Bill spent money—for trips to the seashore, a cabin-cruiser and a five-passenger plane.

Night and day, milk bottles moved up and down the conveyors. One day a filling and capping machine broke down. The service man later told Bill it was useless to repair the machine—it was worn out. So were four other machines. Bill looked at his books. His reserves had been used to buy all the luxuries he really didn't need. The banks thought the airplane and cruiser were poor collateral. There were no milk deliveries that day. Bill's business went up for sale.

Take a look at your last Financial Statement. Do you really have the money that you charged off for Depreciation in the past years? Is it part of your "current" assets . . . or is it earmarked as a separate fund under "fixed" assets?

Write today on your business stationery for your copy of "Good Housekeeping in Business"—a pamphlet which presents what we believe to be a *logical* basis for handling depreciation money. We will be glad to send it to you.

TEXTILE MACHINE WORKS
READING, PENNA.

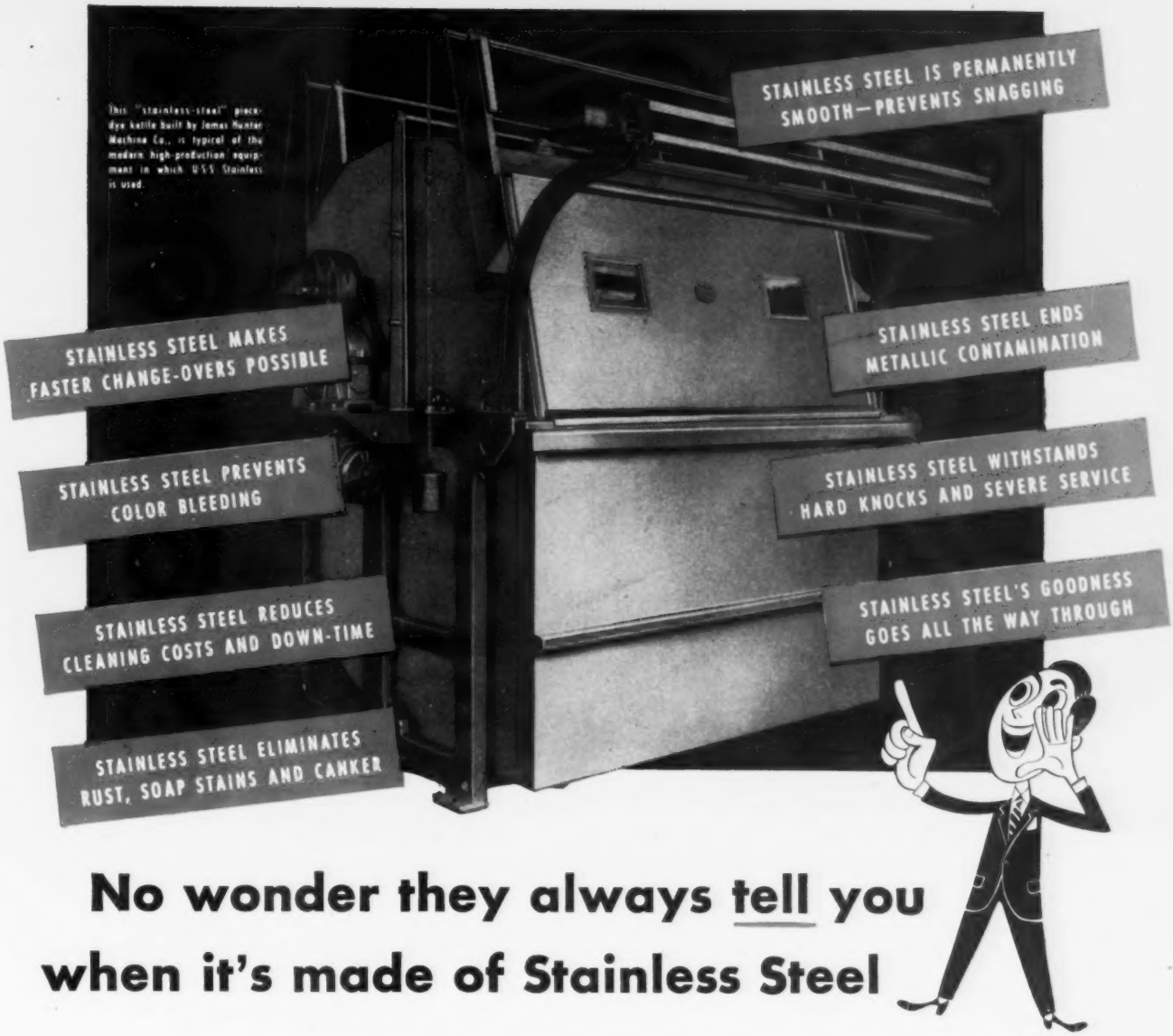
For ideal hardness

Test a Textile Spring-Beard Needle for its wear hardness and you'll find it possesses amazing qualities of resistance. Scientific tempering controls at Textile bring about this proper hardness for wear resistance and ability to withstand stresses. Yet every Textile Needle maintains a high degree of resiliency so necessary during knitting operations.

The outstanding performance of Textile Spring-Beard Needles is the result of Textile's rigid quality controls—automatic and electronic—to make certain it is correct in every detail. These controls mean improved, better knitting results for you.

TEXTILE MACHINE WORKS
Reading, Penna.

Textile
SPRING-BEARD NEEDLES
For Full Fashioned and Warp Knitting


This "stainless-steel" procedure kettle built by Jomas Hunter Machine Co., is typical of the modern high-production equipment in which U·S·S Stainless is used.
STAINLESS STEEL IS PERMANENTLY SMOOTH—PREVENTS SNAGGING
STAINLESS STEEL MAKES FASTER CHANGE-OVERS POSSIBLE
STAINLESS STEEL ENDS METALLIC CONTAMINATION
STAINLESS STEEL PREVENTS COLOR BLEEDING
STAINLESS STEEL WITHSTANDS HARD KNOCKS AND SEVERE SERVICE
STAINLESS STEEL REDUCES CLEANING COSTS AND DOWN-TIME
STAINLESS STEEL'S GOODNESS GOES ALL THE WAY THROUGH
STAINLESS STEEL ELIMINATES RUST, SOAP STAINS AND CANKER

No wonder they always tell you when it's made of Stainless Steel

WHENEVER they use Stainless Steel in their equipment, makers of textile machinery never fail to *emphasize* that fact. They know there's no quicker way to let you know that it is made of the best material available . . . that it won't rust or corrode, will prevent off-color runs, will reduce maintenance and repairs, and will out-last and out-perform other construction.

The money-saving advantages of Stainless Steel have been well proved in the past few years of high pressure operation. That is why in today's new equipment, especially designed to speed up mill operation, Stainless Steel is being used in greater amounts and in more places than ever before.

Although it costs more—Stainless Steel has shown that it can do so much more, do it so much better and lasts so much longer that it is, in many cases, by far the cheapest material to use. Particularly is this true when U·S·S Stainless Steel is used.

In this perfected, service-tested steel, equipment builders and equipment users are sure of obtaining all the superior properties of Stainless Steel at their *best*. Consistently uniform, of fine finish, excellent in fabricating qualities, U·S·S Stainless responds readily and uniformly to the most advanced manufacturing techniques . . . insures the finest results in service. So if you want top performance from your equipment just add "U·S·S Stainless preferred" on your next equipment order. More than likely your equipment builder already uses it, but it pays to be sure.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND, CHICAGO & NEW YORK
CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS UNITED STATES STEEL

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

8-732

UNITED STATES STEEL

Any V-BELT Changes Shape *when it Bends*

Prove this yourself!

That's Why the CONCAVE SIDE..

(U. S. PATENT NO. 1813698)

Gives You 2 Big SAVINGS!

Bend *any* V-Belt and *f e e l* it change shape. The top, under tension, *narrows*. The body, under compression, *widens*. The sides of the belt bulge out.

Straight-Sided V-Belt

Straight-Sided V-Belt Bulges in Sheave-Groove.

The result, if the belt is built with *straight* sides, is a shape that does not fit the sheave groove — as shown in Figures 1 and 1-A, above.

Now, bend the V-Belt built with the precisely engineered Concave Side (U. S. Patent No. 1813698) — the Gates Vulco Rope.

Gates Vulco Rope With Concave Side.

No Side Bulge. Precise Fit in Sheave Groove.

You get the same shape change but *now* the new shape *exactly fits* the sheave groove as shown in Figures 2 and 2-A.

Results— (1) *Uniform* side-wall wear; *longer* life. (2) *Full* side-wall grip on the pulley; carries heavier loads and sudden load increases without slippage—a big increase in drive efficiency—saving belt wear a n d also saving power!

REG U S PAT OFF

The Mark of ***SPECIALIZED*** *Research*

The Concave Side is MORE IMPORTANT NOW Than Ever Before

Because the *sides* of a V-Belt are what actually *drive* the pulley, it is clear that any increased load on the belt means a heavier load that must be transmitted to the pulley *directly* through the belt's side-walls.

Now that Gates ***SPECIALIZED*** Research has m a d e available to you SUPER Vulco Ropes—carrying fully 40% higher horsepower ratings—the life-prolonging Concave Side naturally delivers greater savings today than ever before.

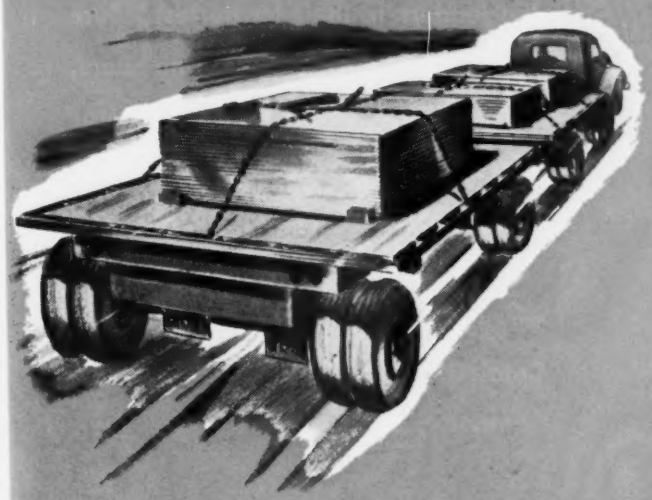
4812

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks IN ALL INDUSTRIAL CENTERS of the U. S. and 71 Foreign Countries

THE GATES RUBBER COMPANY
DENVER, U.S.A.
"The World's Largest Makers of V-Belts"

STOP



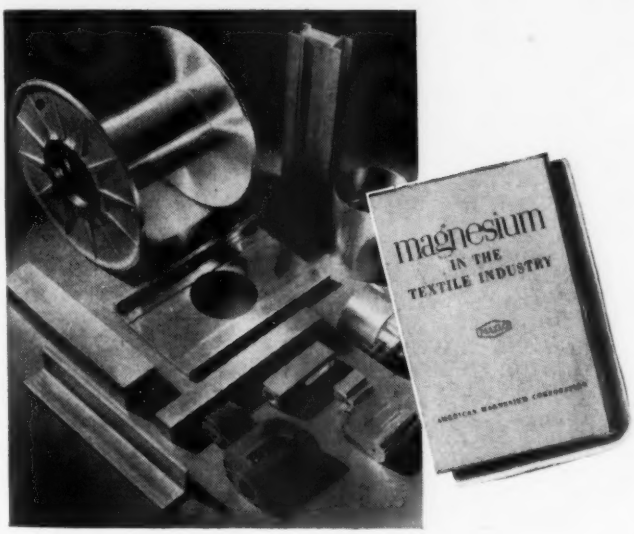
TRUCKERS KNOW how important it is to anchor heavy cargo securely. A sudden stop—and the load might keep on going forward, because of its inertia.

START

HOMEOWNERS KNOW that it takes a lot more effort to start a heavy lawn roller moving than it does to keep it rolling—thanks to inertia.

MORAL: Machinery parts make thousands of starts and stops every day in textile mills. With every change in motion, inertia must be overcome. The more a part weighs, the more power its operation consumes. You can save a lot of power, cut vibration, avoid costly repairs by switching to lightweight parts of American Magnesium. This useful metal is 35% lighter than aluminum, 75% lighter than steel! Next time you talk with your machinery builder, ask him to specify American Magnesium wherever possible to improve performance and minimize wear.

ALUMINUM COMPANY OF AMERICA, sales agent for American Magnesium products, 1705 Gulf Building, Pittsburgh 19, Pennsylvania. Sales offices in principal cities.

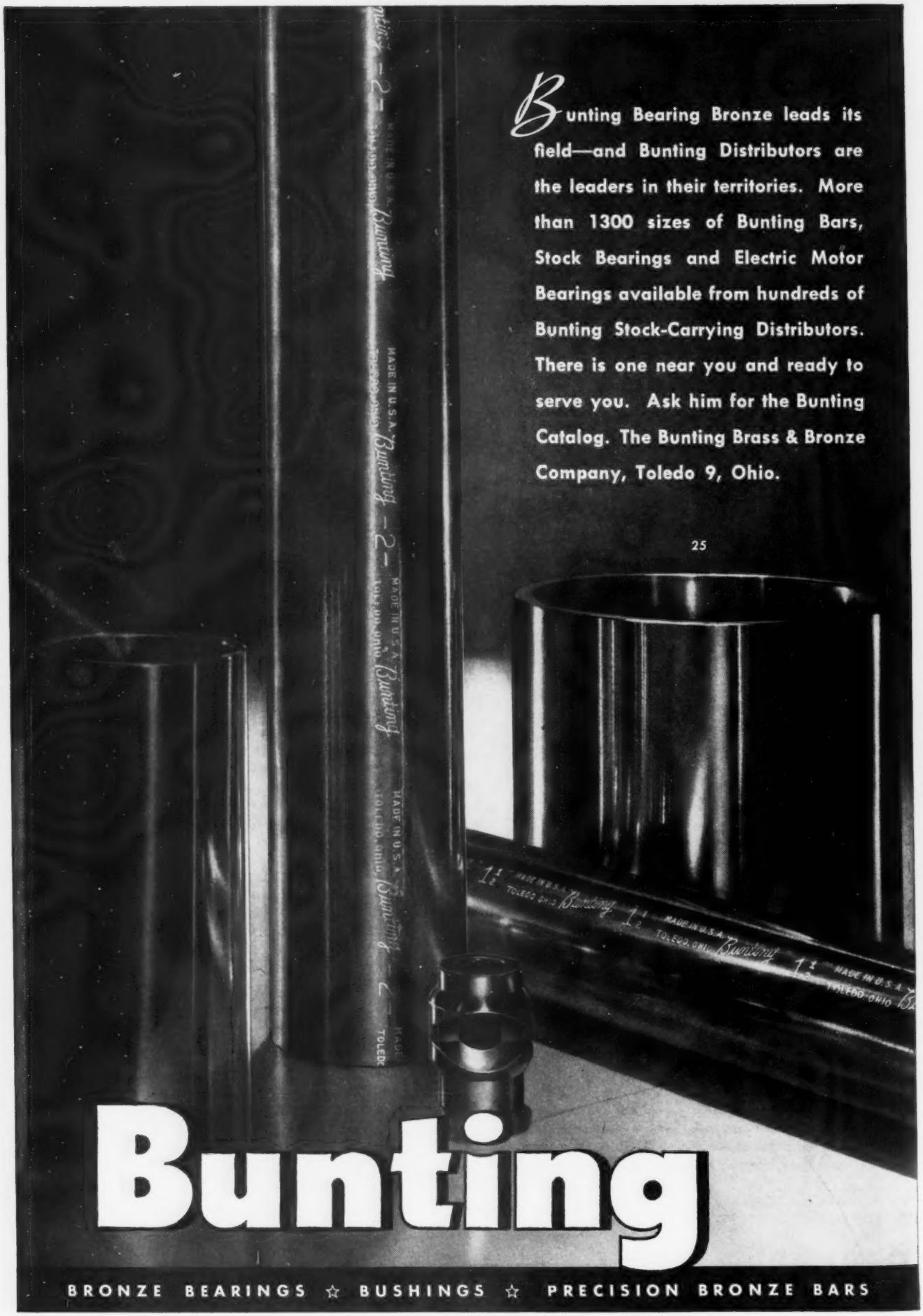


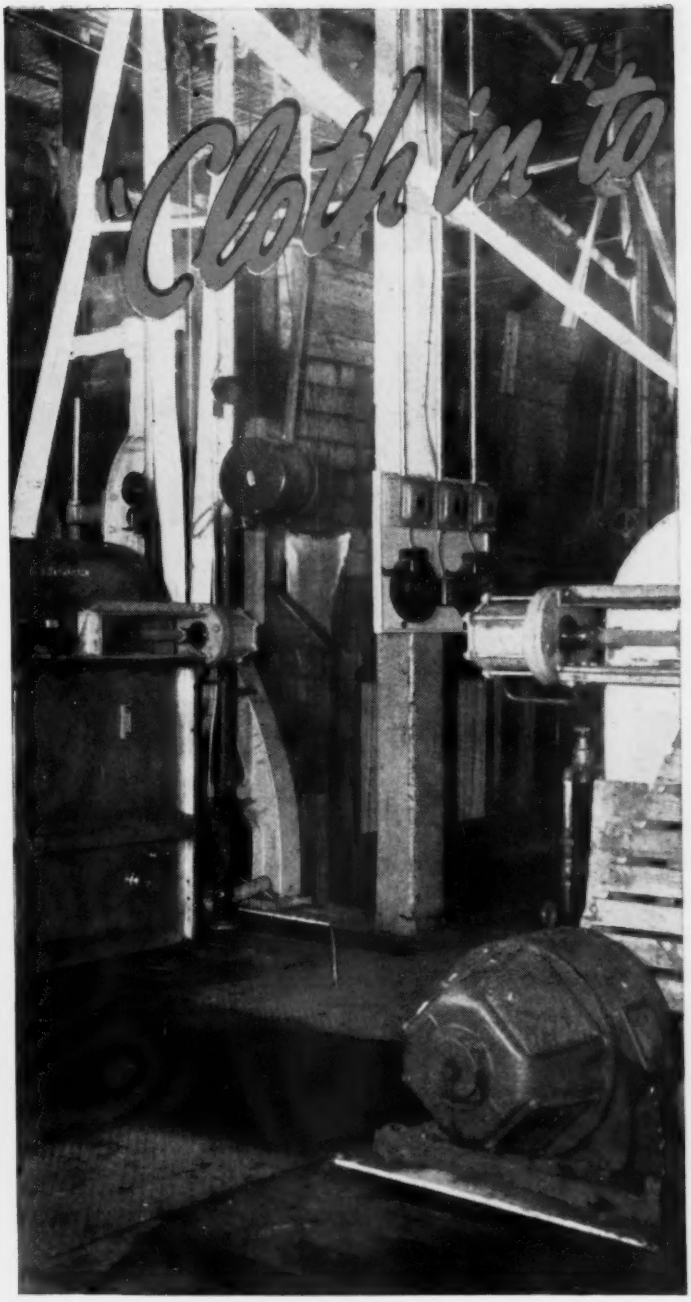
FREE! Here's all the information you need to size up American Magnesium as a means of making better textile machinery. Send for your copy of the booklet, "Magnesium in the Textile Industry"—and make sure your machinery builder has a copy, too.

MAGNESIUM MAZLO Reg U.S. Pat. Off. PRODUCTS

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA


Bunting Bearing Bronze leads its field—and Bunting Distributors are the leaders in their territories. More than 1300 sizes of Bunting Bars, Stock Bearings and Electric Motor Bearings available from hundreds of Bunting Stock-Carrying Distributors. There is one near you and ready to serve you. Ask him for the Bunting Catalog. The Bunting Brass & Bronze Company, Toledo 9, Ohio.
25
Bunting
BRONZE BEARINGS ☆ BUSHINGS ☆ PRECISION BRONZE BARS



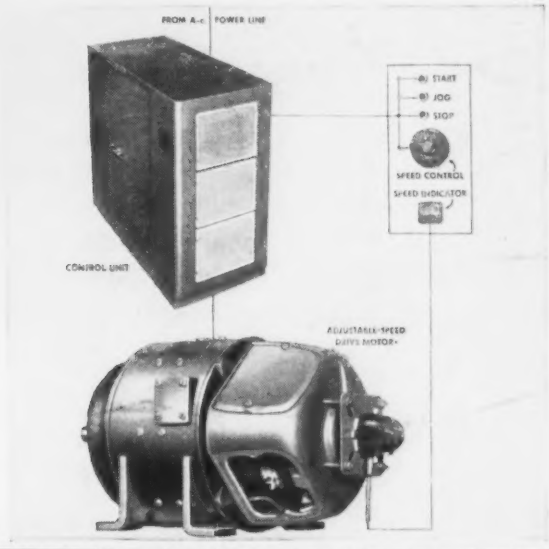
Maximum efficiency in the operation of this modern Becco Process Continuous Bleaching Range at Cluett, Peabody & Co., Inc. is assured by its multi-motored Reliance V★S Drive.

"Cloth out"..

TOP SPEED PROCESSING at BOTTOM DOLLAR COST

...with RELIANCE V★S DRIVE

Actual case histories from mills everywhere prove that Reliance V★S Drive assures maximum processing efficiency to maintain production at peak and to keep costs down. It has a long record of successful applications on continuous bleaching, and finishing ranges and other modern textile equipment. The *Completely-packaged All-electric, Adjustable-speed Drive* Reliance V★S will operate direct from your mill's A-c. circuit. A variety of functions, including quick, smooth starting and stopping, stepless speed changing and maintenance of proper tension, can be had with automatic or manual control at the machine or from any remote location. For a full account of the advantages Reliance V★S Drive can bring to your operations, write today for *new* Bulletin 311.



Conveniently-packaged, factory-wired V★S Drives are available from 1 to 200 hp. Two or more Motors may be operated simultaneously from a single Control Unit.

Sales Representatives in Principal Cities

RELIANCE ELECTRIC AND ENGINEERING CO.

1086 IVANHOE ROAD • CLEVELAND 10, OHIO

"Motor-Drive is More Than Power"

THERE'S SERVICE BEHIND THIS PUMP!

Gardner-Denver Horizontally Split-case Double Suction Centrifugal Pump —one of many Gardner-Denver types.

Two things are needed to provide complete satisfaction when you buy a centrifugal pump—a quality product *and* quality service. For often you want skilled advice in choosing exactly the pump for your needs—advice backed by research and field experience. Often, too, you require friendly, expert help in getting the most out of your pump after it is installed.

All Gardner-Denver Centrifugal Pumps are sold with this backing of service—always at your command—always available at your call. Gardner-Denver branch offices, located in principal centers throughout the country, stand ready to keep your Gardner-Denver pump at peak efficiency year after year.

For superior pumps—AND superior service—write Gardner-Denver.

Gardner-Denver Company, Quincy, Illinois

GARDNER-DENVER SINCE 1859

Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.

A Knitting Star . . .

STANDARD Durene*

for your dual role of greater production–easier sales

Knitters and customers everywhere applaud the excellent performance of STANDARD Durene.

Smooth, elastic, uniform, this quality mercerized combed cotton yarn flows through knitting machines with the minimum of breaks. It produces more garments of soft, lustrous beauty per hour and so keeps down your production costs. Keeps down your selling costs, too, because garments knit with STANDARD Durene give extra comfort, beauty and wear.

You can count upon STANDARD Durene's outstanding uniformity, its free-running smoothness. Every step of its processing, from selected raw cotton to the finished yarn ready for your machines, is rigidly controlled right in our own plants. It must pass the high quality standards dictated by our more than seventy years' experience, our constant research, as well as the many tests in our modern laboratory. Ask our representative to show you how STANDARD Durene can help get greater production and win easier sales.

*REG. U.S. PAT. OFF.

Standard-Coosa-Thatcher Co.

CHATTANOOGA 1, TENN.

Sales Office: 123 S. Broad St., Philadelphia 9, Pa.

STANDARD DURENE • SELO • MERCERIZED COMBED SAKS • THREADS

Branch Offices:

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REPRESENTATIVES IN CENTRAL AND SOUTH AMERICAN COUNTRIES

YOU'LL SPIN *more uniform yarn* AT LESS COST WITH *Dayco* WORSTED COTS

Specially designed and built for their specific job, *Daycos* can't be beat to run all combinations of wool, rayon or mohair mixtures with less matching-up and fewer ends down. Production records from mill after mill prove *Dayco*-equipped frames consistently deliver the most uniform yarn at the lowest cost. Manufactured without laps or splices, *Daycos* are not affected by oils, greases, temperature changes or hard ends. They won't groove, chip or scuff; they keep maintenance costs at rock bottom and cot replacement costs to an absolute minimum. After years of service—*Daycos outlast ordinary cots 12 to 1*—they retain their original co-efficient of friction and resiliency and show no signs of grooving or other deterioration. A trial installation will convince you *Daycos* are your answer to lowest production costs and highest spinning room efficiencies. It will pay you to write today to *The Dayton Rubber Company, Textile Division, Woodside Building, Greenville, S. C.*

Dayco Woolen & Worsted Cots are available in a variety of sizes, or they can be "tailored" to meet your specifications.

REASONS Dayco COTS SAVE TIME, MONEY AND LABOR

- Reduce matching-up by getting more uniformity in production.
- Increase cot life from as little as 60 to 90 days to estimated life of 10 to 15 years—based on years of field tests.
- Eliminate wasted time and labor in removing and resetting the pressure on rolls after shutdowns.
- As much as 66% savings in labor and time applying cots to arbors.
- Save valuable time for the spinning frame mechanics—as replacement of rolls on frames are reduced to the absolute minimum.
- Greatly reduce power consumption on spinning and drawing frames.

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

"Give us the tools . . ."

For High Wages, Full Employment . . . Business Must Have Better Tools *and More Money to Pay for Them*

So far we have escaped the post-war depression predicted by leading government economists. How can we continue to frustrate gloomy prophets who see only depression ahead?

At the end of World War II the federal Director of Reconversion saw depression immediately ahead. He said we would have 6,000,000 unemployed four months after VJ-Day and 8,000,000 a few months later.

But we did not have depression. We did not because:

First, the American business man, sensing the obligations of a vastly more important post-war America, went ahead to build his plant and equipment to meet expanding domestic and world markets—markets bigger actually and potentially, in terms of world-wide trade and profits than any previously envisaged.

Second, the American businessman was able to get the money to go ahead. Since 1945 he has spent $50 billion building new plants and buying new equipment.

There may be other reasons why we missed a depression in 1946. But—make no mistake about it—what has powered our present prosperity is the $50 billion spent by businessmen since VJ-Day to improve their plants.

It provided jobs directly for 5 million people. It paid for more than half of our record-breaking steel output. It put in place the foundations of great new industries such as television. It strengthened the foundations of the chemical, machinery, plastics, steel and oil industries. It has expanded and improved our power systems throughout the country.

This spending has made the difference between prosperity and slump, between industrial strength and serious deterioration.

In fact, we know now that what business spends for new plants and new tools always makes the difference between prosperity and slump, the difference between national strength and weakness.

The accompanying chart tells the story. When we have spent heavily for new plants and equipment, we have had prosperity and strength. When we have not, we have been in trouble.

We would have been in trouble since VJ-Day except that business used its war reserves, plus two-thirds of its profits, plus borrowed money to improve and expand its facilities. This year industry is spending $19 billion this way.

Has this great post-war expansion actually made our economy a "mature economy"? Have we come now to the saturation point the New Dealers mistakenly said we had reached in the '30's?

The answer is no!

Proof of that answer is being developed through a McGraw-Hill national survey of "Business' Needs for New Plants and Equip-

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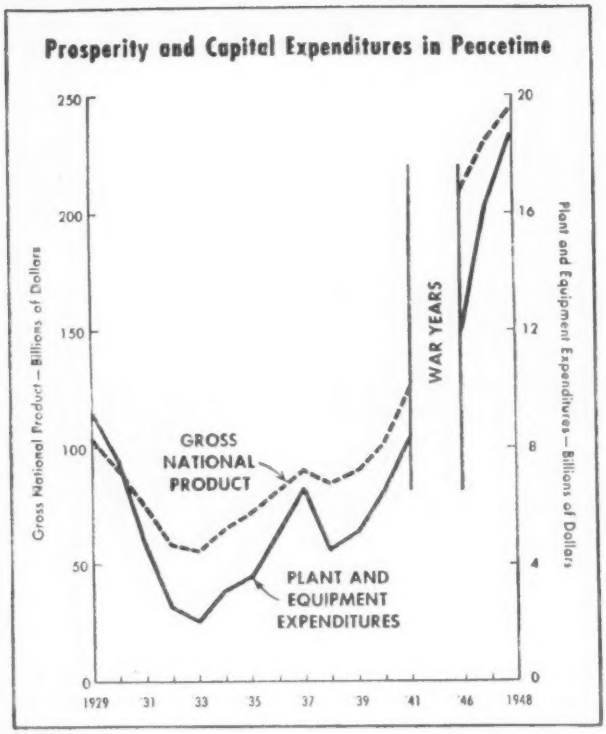


ment" details of which will be given in this editorial series in coming months.

We have a bigger nation, more people, to serve right here at home. Further we must meet human needs which the war created around the world. Also, we must sustain a world position such as this country never assumed before.

Here are immediate things crying to be done.

1. Business still needs billions to expand production because our country and our needs are growing rapidly. Example: To meet the demand for power, electric utility companies must nearly double their present generating capacity in 10 years. That will cost more than $7.5 billion. To fill increasing needs for oil and gasoline, oil companies must spend at least as much.

2. Business still needs billions to get its plants up to date and overcome wear and tear. Examples: Over half a million of our freight cars, a third of the total, are more than a quarter of a century old. About two-thirds of the looms in the textile industry are more than 20 years old. Half of our coke ovens, basic equipment for iron and steel production, are more than 20 years old, and only half as efficient as modern ovens.

3. Business still needs many billions to do new things in dramatic new ways. Example: Machinery that will cut out 80% of the dirty, dangerous work of mining soft coal has been perfected. A new automobile engine plant will reduce the work that goes into engine-building by three-quarters.

Hundreds of similar things that our scientists and engineers have developed could be cited. They can be found in every industry. They hold immeasurable promise of adding to the abundance of American living. In fact, there is hardly a step along the whole route of industry—from roughing out raw materials to delivering finished goods—where there are not new and better ways of doing things standing ready for general use.

But the crucial question now is: Where is the money coming from to put to work these new and better ways of doing things?

Business has used its own resources so far... profits and reserves. The stock market, where industry traditionally has raised money from people willing to risk their savings, has been limping along, giving business no chance to get enough money on satisfactory terms. *Business now must look primarily to its own earnings for the money to carry out the improvements which are necessary if America is to keep itself strong and efficient.* The next editorial in this series will deal with this new and crucially-important role of profits.

But business can not count on profits alone to do the job. Profits are too uncertain.

From now on finding the money... to put new ideas and new equipment to work... to go ahead with the expansion and improvement that will thwart depression and build industrial strength *. . . calls for the support of all Americans everywhere.*

This comes right down to *you... for at stake is your chance for steady work, for better pay, for new things like television, and for more of the every-day things, like coal and clothing, of better quality and at less cost.*

By helping business get new and better tools, you will help yourself—and you will help build a more sound, more prosperous, better America.

James H. McGraw, Jr.

President, McGraw-Hill Publishing Company, Inc.

Photo by U. S. Army Signal Corps

RADIOISOTOPE IS BEING REMOVED from carbon block withdrawn from atomic-fission pile at Oak Ridge after its period of irradiation. Small aluminum can will be placed in lead-block containers near floor at left. A "health physicist" is holding a portable monitor to make sure radiation is not reaching danger point.

Tagged Atoms

Offer a New and Amazing Research Tool

By **WILLIAM B. DALL,** Managing Editor, TEXTILE WORLD

HIGHLIGHTS: Textile use of first peacetime offshoot of atomic bomb is only just at its beginning — Radioactive isotope can be traced and recorded by textile technicians for both research and production-control purposes—First tagged atom used in 1912, first general availability in 1934, first reasonably priced atoms in 1946 —Medicine and biology have used 80% of radioisotope production from Oak Ridge—In one textile application, atomic gage promises to measure film thicknesses to one-millionth of an inch — Mechanics of unstable radiating atom are easy to understand.

A RESEARCH TOOL comparable in importance to the invention of the microscope has been put into the hands of textile scientists as a by-product of the atomic-bomb. Radioactive or "tagged" atoms are now available over almost the whole range of elements and at prices which make their use a relatively inexpensive operation. Textile men are enabled by the introduction of these tagged atoms into a chemical or physical reaction to pursue tracing procedures and to effect measurement records more precise and fundamental than ever before possible.

Hitherto, complex chemical reactions, such as in finishing, could for the most part be analyzed only after they had taken place, and it was not possible to say that particular molecules or atoms were part of a group which had entered the reaction at a particular point if there were other like materials already present. The radioactive atom, however, is like a walkie-talkie broadcaster who is constantly reporting his whereabouts to any one with suitable receiving apparatus. Such atoms can be "watched" with radiation-sensitive instruments, their course plotted, their numbers counted, and even their pictures taken. They obviously can be distinguished from like materials which are not radioactive, so that like substances coming into an experiment at different times, or under different conditions, can be identified during the experiment and in the final result.

The radioactive atom is a chemical counterpart of its stable form. For example, sodium 24 joins into just the same compounds as does sodium 23; but the latter is stable, while the former is constantly decaying into

FRONT COVER DESIGN is based on the scientific concept of an atom of carbon 14, a radioisotope. This atom contains 6 protons and 8 neutrons in two different "shells" of orbits surrounding the nucleus.—Editor.

magnesium 24, the adjacent element in the atomic scale, and giving off rays in the process. Because these atoms are identical in chemical reactions (though differing slightly in atomic weight), they are called isotopes of the same element (from iso, equal, and *topos*, place). A radioactive form is distinguished as a "radioisotope." Some elements have numerous isotopes; as for example, carbon has the forms C 10, C 11, C 12, C 13, and C 14—C 12 and C 13 are stable, the other three are radioactive.

The number used to distinguish a particular isotope is the total of the protons and neutrons in the nucleus of that atom. The total number of protons, each carrying a positive electric charge, remains the same among all members of an isotopic group, while the number of neutrons changes. For example, C 13 has six protons and seven neutrons in its nucleus while C 14 has six protons and eight neutrons. Each neutron carries a zero electric charge.

35-YEAR DEVELOPMENT. The first recorded experiment related to tracer atoms was made by a Danish scientist in 1912 when he proved that radium-D was the same as lead and used its radiations to explore the chemical behavior of lead. Radioisotopes, however, rarely occur in nature, and those which do occur are few in number and scarce. Artificial production of radioisotopes began in 1934, when it was discovered that they could be produced by nuclear bombardment of naturally stable elements. The cyclotron and other particle accelerators or "atom smashers" soon produced radioisotopes of all of the 83 stable elements. By 1940, 370 varieties were known. Only infinitesimal quantities of most of these isotopes could be made in this manner; some so small as to be invisible to the unaided eye. Their cost was very high, but their power as research tools was at once recognized. They were put to work almost exclusively on problems of growth and disease in animals and plants.

Then entered the miracle of Oak Ridge. In the uranium reactor, or "pile," where slow fission chain reaction is maintained, elements or their compounds may be subjected to neutron bombardment and from many stable elements radioisotopes result. Within the time of a few weeks, the Oak Ridge pile can produce millions of times the amount of carbon 14 ever made in cyclotrons. It is said that for this one product alone it would require 1,000 cyclotrons with an operating cost of over $100,000,000 to equal the Oak Ridge output. There are now only 50 cyclotrons and other accelerators in the U. S. and 10 in other countries. Previous scarcity and high cost would have prevented the now widespread use of radioisotopes in research, were it not for the wartime development of the atomic pile.

Uses of tagged atoms range from observing the life processes of nutrition in a mouse to the measurement of metallic film which may be transferred between two contacting sur-

Here are actual and projected uses of interest in textiles

AMONG THE ACTUAL RESEARCH PROJECTS using tagged atoms, few as yet are wholly textile, although many touch importantly on techniques and products used in the industry. Most of the few textile experiments already conducted or projected are in the fields of fabric finishing and primary rayon manufacture and are largely chemical in their nature. However, quotations from reports of actual or projected research in textile or related fields show the types of problems which so far are breaking down before the onslaught of the tagged-atom technique.

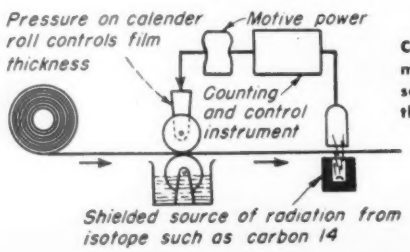
✦ JOHN W. IRVINE, JR., of the Laboratory for Nuclear Science & Engineering, Massachusetts Institute of Technology, Cambridge, Mass., reports on the use of radioactive sodium as a tracer material in a rayon-yarn finish as follows:

"A rayon manufacturer wanted to measure the distribution of lubricant on rayon yarn. Difficulties encountered in spinning and dyeing made questionable the uniformity of distribution of the lubricating finish and an attempt was made to measure that distribution. Since the finish contained sodium oleate, radiosodium was introduced into the finish as part of this compound. Treatment of the yarn was carried out on a laboratory scale and the radiosodium was measured on samples as small as 1 cm. long. Since the yarn was 150 denier, these samples weighed only 0.2 milligram and each sample contained about 0.04 microgram of sodium. A high degree of uniformity was indicated by the sodium distribution; but, since this was a physical tracer, it was not possible to determine whether or not the other components of the lubricant were also uniformly distributed. However, these tests show the extremely high sensitivity of this analytical method."

✦ ALAN P. SCHREIBER, of Tracerlab, Inc., Boston, Mass., writing in *Nucleonics*, lists a number of actual and potential uses of tagged atoms, principally in the rayon industry. The following is quoted:

"If tracer quantities of radioactive sulphur 35 as carbon disulphide are added in the xanthating process, there are several uses to which it could be put in process control. Part of the sulphur is removed in the coagulating baths, and the rayon filament is completely freed of it in the desulphurizing bath. Continuous routine check of sulphur removal can be made by placing a Geiger-Mueller counter in close proximity to the rayon filament or the solutions through which it passes. It is possible that automatic electronic controls could be devised to keep the coagulating and desulphurizing baths within predetermined concentration ranges by coupling the output of the G-M tubes through a suitable servo-mechanism to valves on chemical solution tanks. Radioactivity monitoring devices, placed in areas where gas leaks are likely to occur, can be made to sound an alarm when sulphur-containing gas or vapor escapes before the amount rises to the point where it will be smelled by the workers.

"In preparing the viscose solution, cellulose-xanthate crumbs are dissolved in sodium hydroxide to form a solution of a predetermined concentration. The dissolving and dilution process can be automatically controlled by use of radioactivity techniques. A patent has been granted to D. G. C. Hare for determining specific gravity of fluids by measuring backscattering of radioactivity from the solution being measured. A portion of the scattered rays from a source of hard gamma radiation are reflected back to a G-M counter, the counting rate detected being a function of the intensity of the gamma source and


Pressure on calender roll controls film thickness
Motive power
Counting and control instrument
Shielded source of radiation from isotope such as carbon 14

Controling thickness of a film by measuring radiation from a fixed source which is able to force way through film.

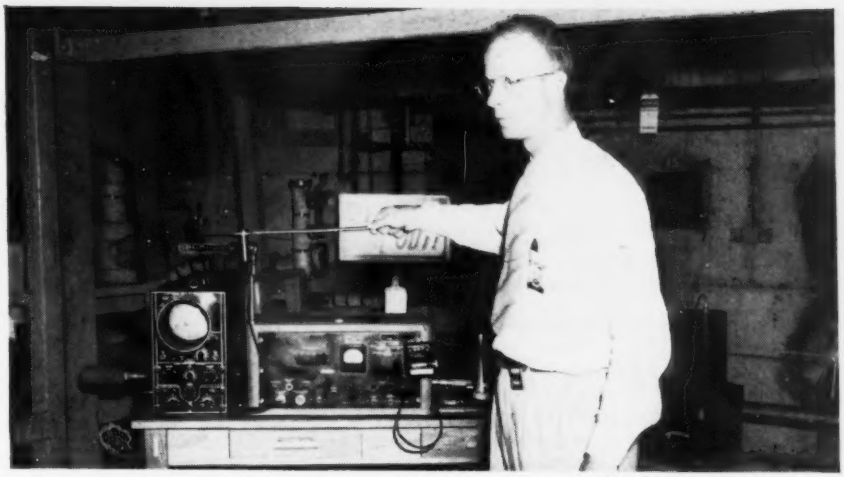


Photo by U. S. Army Signal Corps

ACTIVITY OF A RADIOACTIVE ISOTOPE is being checked by exposure to a Geiger-Mueller tube. Count may register on meter shown on face of amplifier-scaler, or pattern may be observed on screen of oscillograph at left.

faces, as in a bearing. So far, the medical and biological uses dominate. Figures tell the story. Out of 3,136 shipments of radioactive isotopes from the Isotopes Div., AEC, Oak Ridge, Tenn., between July 1, 1946 and June 30, 1948, 2,529 went to institutions working in the fields of medical therapy, animal physiology, plant physiology, and bacteriology in that order of importance; 543 went for work in pure science in chemistry, physics, and metallurgy; and only 90 shipments were made to organizations doing industrial research.

By kinds of isotopes, the 3,136 shipments were made up 1,017 of iodine 131, 1,007 of phosphorus 32, 222 of carbon 14, 145 of sodium 24, 86 of gold 198 and 199, 66 of sulphur 35, 62 of calcium 45, 62 of iron 55 and 59, 47 of potassium 42, and 424 of 52 other isotopes. The dominance of iodine and phosphorus is due to their importance in medical and biological work.

WHO CAN BUY ISOTOPES? The Atomic Energy Commission has made the Oak Ridge tagged-atom facilities available since mid-1946 by the sale of by-products or by the use of its atomic pile for the irradiation of specific materials. Sale of radioisotopes is focused on institutions, firms, etc., which have

the density and thickness of the materials upon which the rays have impinged. For a given system, the counting-rate meter can be calibrated to read directly in specific gravity.

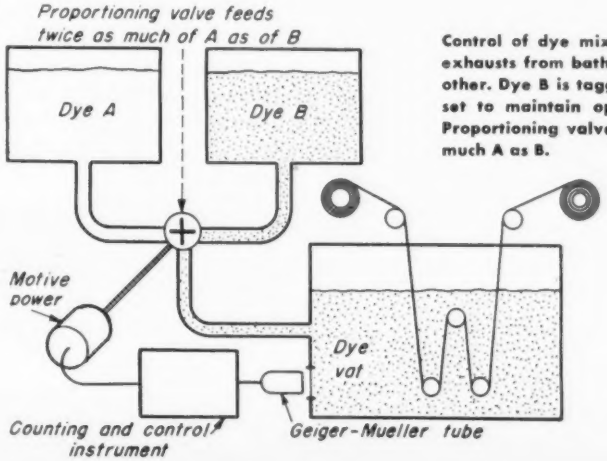
"A G-M counter in close proximity to rayon filament just after it has been coated with a radioactive lubricant will continuously indicate the film thickness. If the output of the G-M counter were electronically coupled to the lubricant control valves by a suitable servo-mechanism, the amount of lubricant coated on the filament could be continuously and automatically controlled. Too little activity on the filament would open the valve, whereas too much would close it. As the fabric or filament passes through a washing bath, it can be monitored by a G-M counter to check for complete removal of coating compounds containing radioactive tracers.

"Rayon fabrics are sometimes chemically coated to make them fire-, mildew-, or water-resistant. If a radioisotope were compounded with the coating material, it would be a simple matter to control uniformity and thickness of the coating.

"Radioactivity can be of considerable assistance in controlling dye concentration in the dye bath and weight of dye absorbed by the fabric. The continuous dyeing process is particularly adaptable to this type of control. If one or more radioactive atoms were incorporated into the dye molecule and tracer quantities of it were mixed with the normal dye, the concentration of dye present in either the cloth or the dye vat could be continuously and automatically determined by G-M counter and electronically actuated controls operated.

"Rayon manufacturers are sometimes troubled by 'cratering' of spinnerets. Deposits of foreign materials containing elements such as calcium, barium, iron, aluminum, and many others build up around the spinneret holes. Up to the present, the source of this deposit is not known. Tracer experiments can determine the source of these deposits and might give some indication as to how they can be eliminated.

"Part of the cellulose which enters the viscose rayon process as a raw material disappears through dissolving or non-reactivity. It is known that alpha cellulose is much less susceptible to dissolving in the caustic treatment prior to xanthating than are either beta or gamma cellulose. If a means were found for tagging cellulose molecules with radioactivity, then considerable knowledge could be gained both for solving this specific problem and to aid in better understanding the fundamentals of cellulose chemistry."



Control of dye mixture if one dye exhausts from bath twice as fast as other. Dye B is tagged and controls set to maintain optimum amount. Proportioning valve feeds twice as much A as B.

✦ **The fourth semiannual report of the Atomic Energy Commission contains reports from users of isotopes on work done with these tracers. From the relatively small group of industrial research projects, the following are quoted as typical and significant, although their bearing on textile problems is largely indirect:**

"**Edward S. Gilfillan, Jr.**, consulting engineer, Manchester, Mass.—Radiocobalt (Co 60) and radiostrontium (Sr 89 and Sr 90) have been used to collect electrostatic charge from textile materials and deliver the charge to measuring instruments. This has permitted measurements to be made for the first time of the absolute amount of electricity generated during textile processing. Attempts to do this by means other than radioactivity failed. Some progress has been made toward the commercial use of these radioactive materials for dissipating unwanted electrostatic charges around textile machinery. It appears unlikely that cobalt 60 can be used for this purpose, but the application of radiostrontium seems more promising.

"**B. F. Goodrich Co.**, Akron, Ohio.—

specific research projects in mind which must be stated in the application for a radioisotope purchase. It is also essential to the approval of this application that the prospective user have approved instruments for radiation measurement, health-safety checking, and proper handling, all in the hands of adequately instructed personnel under control of a specified scientifically trained individual. It is also provided that results of the research undertaken be published.

These provisions are set up for the public benefit and have been established in view of the fact that the relatively low prices on the isotopes are, in effect, a public subsidy of what researches may be undertaken. Prices, it is said, are figured as nearly as possible on bare operating costs without amortization of the original huge capital investment in atomic-bomb facilities.

When Oak Ridge supplies only the radioactive element and the experimenter wishes it compounded into a particular molecule, some one must perform the needed synthesis before the proposed experiment can go on. If a carbohydrate like starch is needed for an experiment, a delivery of activated carbon alone will not do the trick.

Commercial firms will be encouraged to manufacture and distribute for sale tagged compounds made from radioactive material. This is in line with AEC's announced policy of encouraging private industry to develop the use of radioactive materials wherever industrial participation proves feasible. Some compounds for which adequate commercial production does not exist will be produced in the contractor-operated laboratories of the commission, but the authorities hope that private firms will enter the field to such an extent that AEC will be able in time to withdraw from the manufacture of such compounds for general distribution. The price to be charged for isotope-labeled compounds produced by commercial firms will be established by the seller in accordance with normal industrial practices.

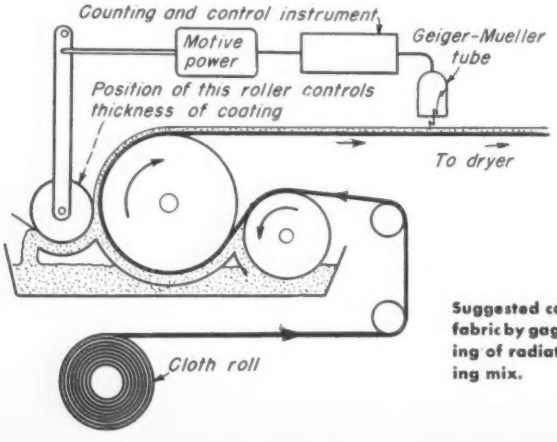
Radioactive iodine (I 131) has been used for measuring the thickness of thin films in the neighborhood of 1 micron (1/1,000th of a millimeter, or 0.000039 in.), which are difficult to measure by more conventional methods. This work is part of an attempt to understand the mechanism by which silicones reduce the adhesion of ice to rubber-like substances.

"**Goodyear Tire & Rubber Co.**, Akron, Ohio.—The new radioactive gage, using radiocarbon (C 14), makes it possible to gage a sheet of Pliofilm or other film continuously as it comes from the rolls. No mechanical contact with the film is required. The film passes through a slot in the gage. Below this slot, there is a small bit of carbon 14. Above the slot there is an ionization chamber in which is produced a minute electrical current by the rays from carbon 14. This current is amplified by sub-miniature vacuum tubes to the point where it is sufficiently large to operate an ordinary electric meter which will then indicate the strength of the rays. Further amplification could be used to actually control the film gage by regulation of the speed of the production machinery. Carbon 14 gives off only a weak stream of beta-rays. These are electrons like the electrons released by the filament of an ordinary radio vacuum tube. The number of electrons getting through the sheet of film depend upon its thickness. Consequently the meter can be graduated to read directly in thickness of film. The new gage will now read with accuracy to a hundred-thousandth of an inch but it is hoped to attain an accuracy of a millionth of an inch.

"**Massachusetts Institute of Technology,** Cambridge, Mass.—Radioactive isotopes of iron (Fe 55 and Fe 59) and chromium (Cr 51) are being used as tracers in studying material transfer between rubbing surfaces. The amount of this transfer is extremely small and the tracer technique is the only method sufficiently sensitive to detect it. Study of such transfer of material is essential to elucidating the fundamental mechanism underlying the phenomenon of dry friction between solid surfaces. It has been found that even between the hardest steel surfaces, i.e., those with nitrided surfaces, as much as 5 micrograms of metal may be transferred from one surface to the other when they rub together. This suggests that transfer is an inherent concomitant of friction.

"**Socony-Vacuum Laboratories,** Paulsboro, N. J.—We are now using radioactive iron to study the chemical and physical reactions occurring at a lubricated surface. Heretofore, progress on direct studies of such interactions has been limited by the lack of sensitivity in the methods used. Now, however, by using radioactive iron as a bearing surface, any iron which reacts with the oil or chemical additives in the oil can be measured with a sensitivity of one part in ten million in as little as 20 milligrams of oil. Increased knowledge of this mechanism may eventually lead to improved, lower cost industrial and automotive lubricants.

"**American Cyanamid Co.**, Stamford, Conn.—Our research program involves the use of radiosulphur (S 35) in studying colloids and colloidal electrolytes. Using sulphur 35, the synthesis of a wetting agent of the sulphosuccinate class has been carried out, and at the present time we are obtaining results on the adsorption of this material. The radiosulphur appears to be giving information which will be of great interest to the general understanding of the behavior of these surface-active agents, and we regard its use in this problem as unique."



Suggested control of coating laid on fabric by gaging thickness from reading of radiation by isotopes in coating mix.

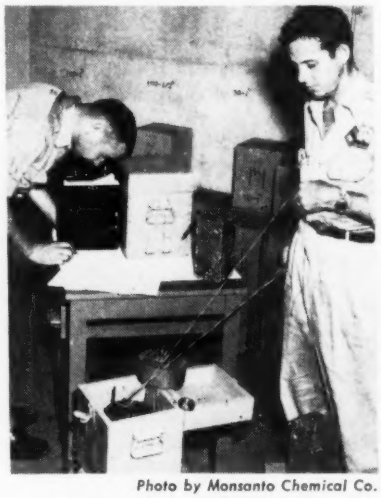


Photo by Monsanto Chemical Co.

GLASS BOTTLE CONTAINING IODINE 131 is being placed in lead container for shipment. The smaller badge on technician at right (to left of his picture badge) contains film for measuring his daily exposure to radiation.

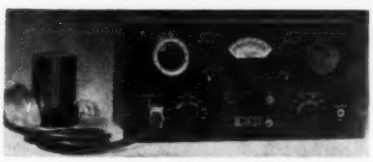


Photo by General Radio Co.

TYPICAL COUNTING-RATE METER is associated with receptical at left to measure radiation from sample put therein.

If and when radioisotopes are used on a large commercial scale, AEC has warned that the commission's whole pricing policy will be open to reexamination.

Of the 237 institutions to which isotopes were shipped by Oak Ridge in the two years ended last July 1, the great majority were universities and hospitals. Of the relatively few industrial concerns, the following names are extracted from the published list as typical. None is strictly textile, though all named below impinge on some phases of the textile industry:

American Cyanamid Co., Stamford, Conn.; E. I. du Pont de Nemours & Co., Wilmington, Del.; Arthur D. Little, Inc., Cambridge, Mass.; Sylvania Electric Products, Inc., Salem, Mass.; Allied Chemical & Dye Corp., Morristown, N. J.; Johnson & Johnson Research Foundation, New Brunswick, N. J.; Socony-Vacuum Oil Co., Paulsboro, N. J.; U. S. Rubber Co., Passaic, N. J.; Sun Chemical Corp., New York; The Texas Co., New York; B. F. Goodrich Co., Akron, Ohio; Goodyear Tire & Rubber Co., Akron, Ohio; Monsanto Chemical Co., Dayton, Ohio; Westinghouse Research Laboratories, East Pittsburgh, Pa.

RAY-SENSITIVE INSTRUMENTS. The key utensil in adapting the radioactive elements to research is, of course, a device to recognize and measure radiation. The principal mechanism for this purpose is the Geiger counter, comprising a Geiger-Mueller tube which receives the radiations and converts them into minute electrical impulses, an amplifier into which these impulses are fed, an autoscaler which cuts the number of impulses by any selected power of two to bring them within a practical range, and a meter which indicates the number of impulses. There are other devices for rating the emission of rays—Westinghouse has developed one which shows radiation level on a fluorescent screen; a pocket electroscope checks the radiation level in a room; a "film badge" worn

How Tagged Atom *Works*

THE MECHANISM of a radiating atom and some of the nomenclature related to it are not difficult to understand. The concept of an atom's structure involves a system like our solar system with a nucleus in the center (like the sun) and a cloud of electrons circling aound (like planets). The nucleus is made up of protons, particles having a positive charge, and neutrons, particles of zero charge since in them the negative and positive charges are in balance. The electrons are negatively charged and equal the protons in number.

For every atom of a particular element, the number of protons is constant. That number sets the position of the element in the atomic table and is called the atomic number. Protons plus neutrons (their weights are almost the same) give the atomic weight. All atoms of identical number of protons behave alike chemically. Variation in number of neutrons gives rise to "isotopes." Practically all the elements in the forms found in nature are stable and non-radiating, though there may be more than one form. Both carbon 12 and carbon 13 are found in nature and both are stable. Add another neutron to the nucleus of carbon 13 to get carbon 14 and there is produced an unstable radioactive isotope; subtract one or two neutrons to reach carbon 11 or carbon 10, and again is found instability and radiation.

Radiation results from a breakdown in the components of the nucleus resulting in the emission of energy (gamma rays) or particles (beta rays). Take sodium 24 for an example. This is produced by bombardment of sodium 23 (the normal stable form) with neutrons. The normal sodium atom has in its nucleus 11 protons and 12 neutrons, whence the atomic weight of 23.

When an added neutron is forced into the nucleus, the atomic weight goes up to 24. This situation is unstable for reasons yet unfathomed, and the two charges in one of the neutrons split – the negative particle is ejected from the nucleus and the positive particle remains as a proton. Thus, a nucleus with 12 protons and 12 neutrons is formed which is no longer sodium. The atomic number 12 belongs to magnesium, next up the scale from sodium. The decay has resulted in transmutation, and the compound now contains magnesium 24 instead of sodium 24. Magnesium 24 is stable.

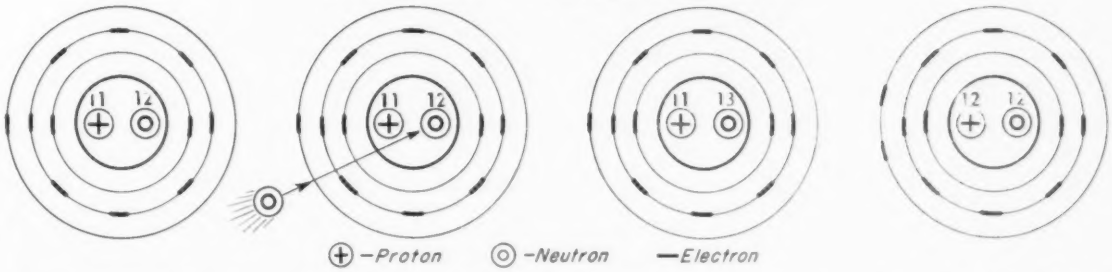
These conversions, with accompanying radiation of beta or gamma rays, do not all take place at once; but they do take place in an orderly fashion. In a fixed period, the sample will have lost half of its radioactivity. Half of what is left will be lost in the next repetition of that same time interval, and again half in the ensuing interval, and so on to infinity. This time factor is called the isotope's "half-life." With sodium 24, it is 14.8 hr; with sulphur 35, it is 87.1 days; with iodine 131,8 days; with carbon 14, 5,100 years; it varies from seconds to centuries.

The amount of radiation from the various isotopes also varies. A "curie" is the arbitrary standard set up to measure this radiation. It is defined as that amount of radioactive material that disintegrates at a rate equal to that of one gram of radium; that is, about 37 billion disintegrations per second.

A millicurie, which is the unit usually used, is one thousandth (0.001) of a curie or 37 million disintegrations per second; and a microcurie is one millionth (0.000001) of a curie or 37,000 disintegrations per second.

One millicurie of carbon 14, with 37,000,000 atoms disintegrating every second, is contained in 1/300th of an ounce of barium carbonate ($BaCO_3$), the form in which carbon 14 is usually made avail-

Birth and Death of a Typical Radioactive Isotope or "Tagged" Atom



Schematic diagram of atom of Sodium 23: 11 protons and 12 neutrons in nucleus and 11 electrons in orbits.

Sodium 23 is bombarded by neutrons. One enters nucleus and attaches itself to the 12 already there.

One neutron splits into positive and negative particles. One positive, now a proton, attaches itself to the nucleus.

In the final decay stage, beta and gamma radiations are given off and a stable atom of magnesium is formed.

by workers exposed to radiation indicates the total exposure during the wearing period when the film is developed and checked with standard films.

Radioactive materials in the group under consideration give off alpha, beta, and gamma rays. Adequate protection against the first two is by simple shielding; against the last, substantial thicknesses of lead or other guard must be used. From over-exposure to these rays arise many human ills, from a light dermatitis to cancerous afflictions which may cause disability and death. Because of these hazards, a "hot" lab must be equipped with counters, shields, tongs for remote handling, mirrors for seeing around a shield, etc. Great care to prevent pickup and retention of radioactive material on shoes, clothes, skin, must be exercised; and scrupulous attention paid to discarded material.

USE IN PRODUCTION PROCESSES. Although at present limited to research, tracer atoms offer interesting applications in the control of production processes in industry generally and in textile processing particularly. Admixture of a tracer element in a coating compound could, for example, be used to control the thickness of that coating when laid on a fabric by coupling a Geiger counter to apparatus which determines the coating thickness. If the count declines below a set point, indicating a thinner coating, the control would work to make it deeper; if the count increases the reverse would happen. The coating would therefore remain constant within tolerances of infinitesimally small measurements, according to experimenters. Another production use might be automatic maintenance of a dye bath where the dyestuff is absorbed faster than the solvent or where a mixture of dyes exhaust from a bath at different rates. Again, one or another chemical would contain tagged atoms. The impulse count would be an index of the amount of that material present, and its rise or fall would work valves to keep the amount at the optimum.

Although such production uses are not a current problem, they may become one in the near future. Before most firms would consider their use in products themselves, however, there are several hurdles to jump, including principally (1) uncertainty as to consumer reaction to knowledge or suspicion that radioactive materials had

(*Continued on page 218*)

able, and in which only 0.1 to 4.0% of the carbon atoms are radioactive. The half-life of carbon 14 is 5,100 years, so that it will continue without much change in its 37,000,000 disintegrations per second over several life times. If this 1/300th of an ounce of radioactive barium carbonate were distributed among 1,000,000 rats, the radioactivity would still be detectable in each rat. The extreme dilution possible with these tracer substances may surprise the technician who has not used them, and it results in a sensitivity said to be millions of times greater than any analytical technique ever before provided. The Oak Ridge price on carbon 14 in $BaCO_3$ is $50 per millicurie.

Further evidence of sensitivity is given in the report of a series of experiments extending over one year using radioactive hydrogen 3 (tritium) which consumed less than a cubic centimeter of water containing that isotope and the amount of the isotope in the water was of the magnitude of only one part in a million million!

Isotope production at Oak Ridge is achieved in a number of ways. Some radioisotopes are direct fission products separated from uranium, neptunium, plutonium, etc. Others are produced in the pile by exposure to irradiation of so-called "target" material sealed in small aluminum cans which are inserted in carbon blocks and placed inside the pile. The target material may be a stable isotope of the element in question, or another element. An example of the latter is the making of iodine 131 by bombardment of tellurium, or by fission of uranium 235. Phosphorus 32 is made by the bombardment of sulphur. The irradiated materials are sold by the unit can as they come from the pile. Prices cover a wide range, but typical are potassium 42 at $12 per unit; sodium 24 at $12; sulphur 35 at $33; chromium 51 at $34. The pile produces a large number but by no means all of the available isotopes. The cyclotron or "atom smasher" is the only source of a substantial group of isotopes which are not distributed by Oak Ridge but are available from the various cyclotron laboratories.

A Directory of Sources for Radioisotopes and Allied Needs

Radioisotopes —

ISOTOPE DIV. OF UNITED STATES ATOMIC ENERGY COMMISSION, Oak Ridge, Tenn. Dr. Paul C. Aebersold, chief of division. Advisory Committee on Isotope Distribution — chairman: Dr. G. Failla, Columbia University Medical School. Members: Dr. H. A. Barker, University of California; Dr. Henry Borsook, California Institute of Technology; Dr. Robley D. Evans, Massachusetts Institute of Technology; Dr. Hymer L. Friedell, Western Reserve University; Dr. J. G. Hamilton, University of California; Dr. Joseph W. Kennedy, Washington University; Dr. Robert F. Mehl, Carnegie Institute of Technology; Dr. Paul C. Aebersold, Clinton Laboratory, AEC; Dr. Austin M. Brues, Argonne National Laboratory, AEC; Dr. A. H. Holland, Jr. AEC, Oak Ridge, Tenn.; Dr. L. N. Nims, Brookhaven National Laboratory, AEC. Oak Ridge offers 59 elements in 106 different isotopes; also about 40 labeled compounds. Half-lives range from 30 sec. to 1,000,000 years; Prices range from 67¢ to $134.70 per millicurie, or from $9 to $2,168 per irradiated unit, plus handling charge, deposit on container, etc. Catalog and application forms are available.

TRACERLAB, INC., 55 Oliver St., Boston 10, Mass. — Isotopes in compounds.

RESEARCH SERVICE DIV., AEC, Chicago Directed Operations, 1716 W. Pershing Rd., Chicago, Ill.

UNIVERSITIES and other institutions which operate cyclotrons or other "atom smashers."

Film-Badges and Service —

AEC, Oak Ridge, Tenn.

TRACERLAB, INC., 55 Oliver St., Boston 10, Mass.

Electroscopes —

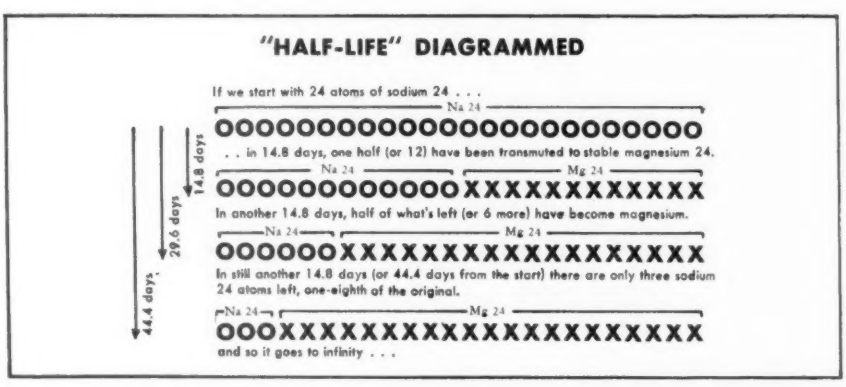
ENGINEERING LABORATORIES, 610 E. 4th St., Tulsa 3, Okla.
GEOGRAPHICAL INSTRUMENTS CO., Arlington, Va.
INSTRUMENT DEVELOPMENT LABORATORIES, 223 W. Erie St., Chicago 10, Ill.
NATIONAL TECHNICAL LABORATORIES, South Pasadena, Calif.
TRACERLAB, INC., 55 Oliver St., Boston 10, Mass.
VICTOREEN INSTRUMENT CO., 5806 Hough Ave., Cleveland, Ohio

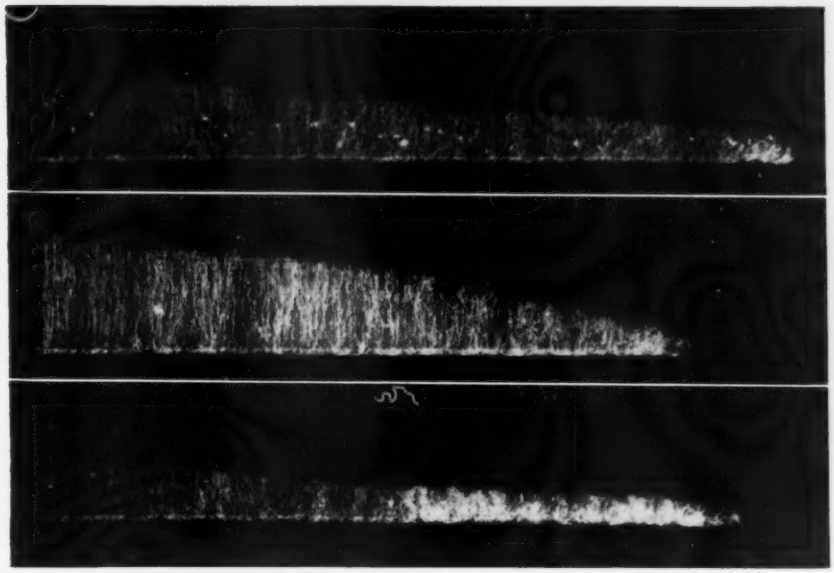
Geiger-Mueller and Related Counters —

BECKMAN INSTRUMENTS, Natl. Technical Laboratories, S. Pasadena, Calif.
EL-TRONICS, INC., Philadelphia, Pa.
INSTRUMENT DEVELOPMENT LABORATORIES, 223 W. Erie St., Chicago 10, Ill.
KEELY-KOETT CO., Covington, Ky.
POTTER INSTRUMENT CO., 136-56 Roosevelt Ave., Flushing, N. Y.
RADIATION COUNTER LABORATORIES, 1844 W. 21st St., Chicago 8, Ill.
TECHNICAL ASSOCIATES, 3736 San Fernando Road, Glendale 4, Calif.
TRACERLAB, INC., 55 Oliver St., Boston 10, Mass.
VICTOREEN INSTRUMENT CO., 5806 Hough Ave., Cleveland, Ohio

Publications Relative to Radioisotope Availability and Use —

DOCUMENT SALES AGENCY, P. O. Box 62, Oak Ridge, Tenn.
ACADEMIC PRESS, 125 E. 23rd St., New York 10, N. Y.
JOHN WILEY & SONS, 440 Fourth Ave., New York, N. Y.
NUCLEONICS, 330 W. 42nd St., New York 18, N. Y.


"HALF-LIFE" DIAGRAMMED
If we start with 24 atoms of sodium 24 . . .
Na 24
. . . in 14.8 days, one half (or 12) have been transmuted to stable magnesium 24.
14.8 days
Mg 24
In another 14.8 days, half of what's left (or 6 more) have become magnesium.
29.6 days
In still another 14.8 days (or 44.4 days from the start) there are only three sodium 24 atoms left, one-eighth of the original.
44.4 days
and so it goes to infinity . . .



A fiber array laid down in natural condition showing neps and broken spun fibers from garnetted stock used in making backing yarn for knit goods.

Comber sliver arrayed for nep count and other impurities will also show percentage of short fiber removed when compared with array made before processing.

Comber noils laid down in an array that is used to check the loss of long fiber and amount of neps removed from comber lap.

FIBER SORTERS Aid Cotton-Mill Operation

HIGHLIGHTS: *Low-mix index of cotton from bales indicates low strength in yarn—Fiber arrays before and after processing analyzed to show proper speeds and settings—New fiber sorters indispensable as laboratory testers.*

By SETH CARTER

MORE VALUABLE and practical information can be obtained by operating mill men with improved fiber sorters than with any other types of testing or analyzing equipment, either in the laboratory or in the processing departments of the mill. This is a very broad statement. It will bring from many quarters, unfamiliar with the modern application of fiber sorters to some of the more troublesome mill problems, the question: "If this is true, why haven't fiber sorters come into more general use?"

The question is justified by the knowledge of the failure of many past attempts to apply the older types of fiber sorters to practical mill problems. The failures were due to the limitations of the sorters themselves rather than the failure of mill men to recognize the value of precise fiber-length analysis.

There are two important dimensional properties of the cotton fiber: fiber fineness and fiber length. Both properties influence the potential strength of the finished yarn. The comparative value of each property has never been unanimously agreed upon by research men and operating mill men.

The more liberal doctrine, accepted by a majority of interested parties, is that the properties are closely related to each other. To quote from a recent U. S. Dept. of Agriculture bulletin on "Spinning Tests of Various Types of Cotton": "As a general rule, long cottons are fine fibered and short cottons are coarse fibered . . . although an increase in strength of yarn frequently follows as increase in staple or fiber length, the increase in yarn strength appears to be due to the associated increase in fiber fineness rather than to the increase in fiber length."

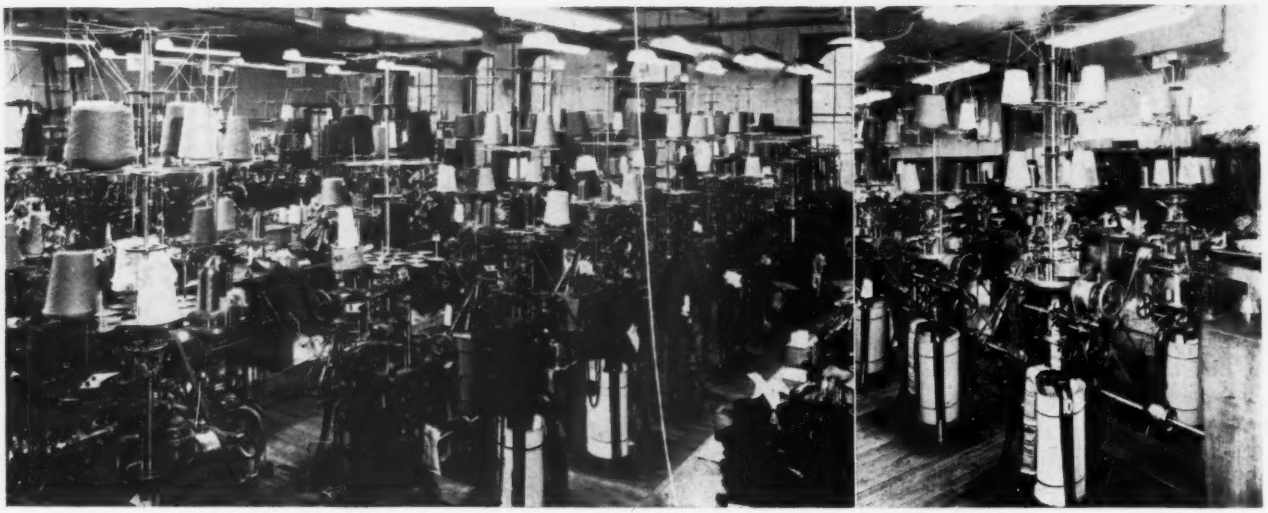
While it must be admitted that fiber length is no guarantee of fiber fineness, it is a generally accepted fact that, in normal cotton, an increase in fiber length usually results in an increase in yarn strength. How much of this increase can be attributed to each dimensional property (length or fineness) is still open ground for discussion.

DIMENSION VALUE. A large part of the uncertainty in evaluating the effect of fiber length (and its associated property, fiber fineness) on yarn strength is due to the failure to consider and determine the value of each factor included in these composite fiber lengths. The cotton classer's definition of staple length is a quick, practical, and commercially comparative method of stating fiber-length values. It fails, however, to consider the proportion of all fiber lengths making up this classified length. This proportion of long and short fibers has an important effect on the strength and uniformity of the finished yarn.

A true estimation of fiber-length values cannot be obtained by consideration of the predominant length alone, as is done in cotton classing. Length values of all the fibers in the specimen from the maximum to the minimum must be measured to obtain true length values and determine their probable effect on yarn strength and uniformity. Mean fiber length and fiber-length uniformity are better indicators of fiber-length values than classified length.

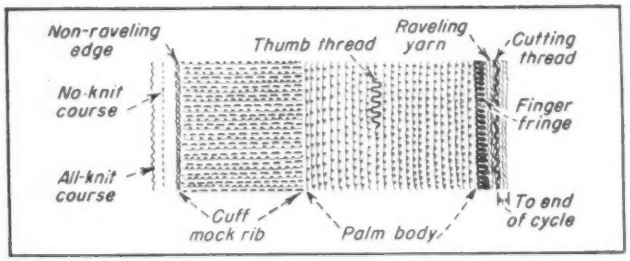
Fiber-length distribution arrays have long been recognized as the most effective method of determining true length values of cotton specimens. The fibers are laid down in uniform order of their lengths from the longest to the shortest. Each length group can be measured, and the ac-

(*Continued on page 192*)

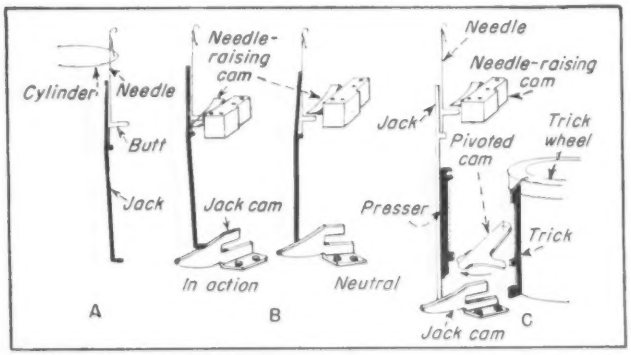


Patterned gloves are turned out on modern equipment at the plant of Jos. A. Milstein Co., Albany, N. Y.

GLOVE KNITTING Uses Ten Machine Operations



SEVEN OF THE TEN MACHINE FUNCTIONS are required to make this misses' glove. No palm-body pattern is used on this particular pattern.



NEEDLES IN THE SINKER DIAL are individually controlled. The jack in the cylinder slot and the needle are in a neutral position in sketch A. In B, the jack is traveling up the jack-raising cam, raising the needle so that its butt comes into contact with the needle-raising cam. Plain knitting continues until an interference occurs.

Pattern knitting is accomplished by controlled interference with the plain-knit mechanism. In sketch C, the trick is inserted according to pattern in the trick wheel. When the wheel comes into action, the trick pivots the pivoted cam. The pivoted cam actuates the jack presser, which pushes the jack off the raising cam. The needle cannot engage the needle-raising cam and does not knit.

HIGHLIGHTS: *Gloves knit on conventional principles but require many controls—Ten functions complete glove or mitten body.*

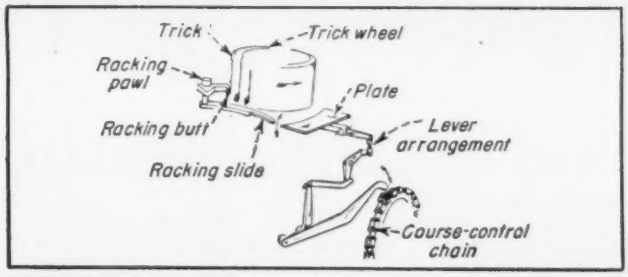
By ALBERT M. YOUNG, Jr.

THE MAKING OF PATTERNED GLOVES or mittens requires many mechanical controls. Ten different operations within the machine are required to make the glove or mitten. These operations produce:

1. A plain all-knit course.
2. One no-knit course.
3. Two courses of controlled knitting (every other needle) to produce a non-raveling edge.
4. Production of a mock-rib cuff, which involves knit and welt operations.
5. Knitting the palm body (until the design is reached). This step may require yarn changing, for both color and size.
6. Knitting the design into the palm body.
7. Putting in the thumb thread at the required distance from the cuff.
8. Continued pattern knitting.
9. Knitting the plain body to the finger fringe.
10. Knitting about four courses of raveling yarn, inserting the cutting thread, and continuing the raveling yarn to the end of the cycle.

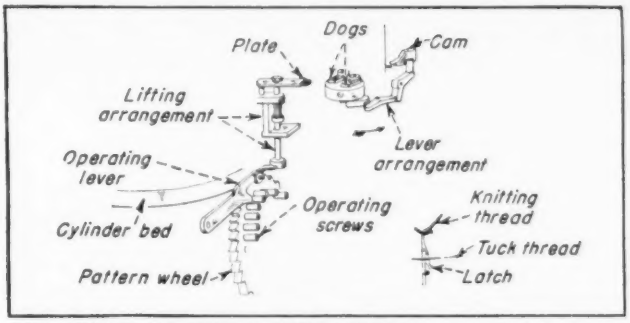
These ten functions complete one glove or mitten body.

The basic fabric produced on the Brinton T. W. S. machine is made on the conventional knitting principles of a cylinder of vertically held latch needles. While a sinker dial is used, the needles are individually controlled. Some of these automatic functions of the machine are illustrated in the accompanying sketches.



THE TRICK WHEEL is revolved according to pattern by this mechanism. Below the trick is a racking butt. The racking pawl, attached to the racking slide, engages the butt. When the cylinder revolves, the racking slide either strikes or misses the plate, according to pattern. If it strikes, the pawl releases one racking butt and moves to the next one. If it does not strike, the pawl remains engaged with the same trick and the wheel does not advance.

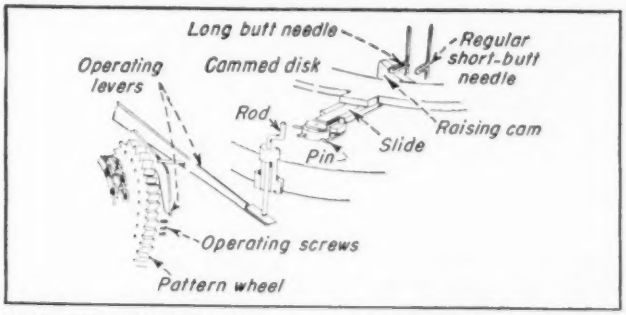
The raising or lowering of the plate to strike or miss the slide is controlled through the lever arrangement and control chain. High and low links are used in the chain to control the pattern of knitting.



THE TUCK OR WELT OPERATION is controlled by lifting the screws on the face of the pattern wheel. As the pattern wheel turns, screws lift the operating lever. This lever acts on the post to place the plate in position to contact or miss the dogs. The needle cam is raised or lowered by the dogs through the lever arrangement.

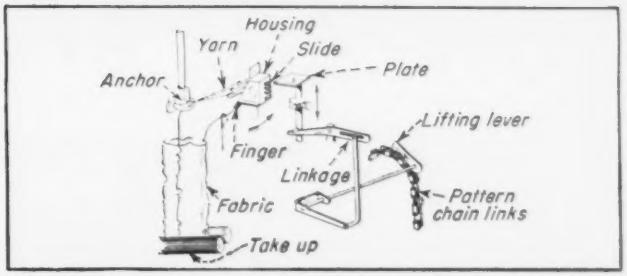
If a welt stitch is desired, the needle is raised until the hook of the needle reaches the top of the cylinder. The needle cannot engage the new yarn but holds the yarn already in the hook.

If a tuck stitch is desired, the needle is not raised high enough for the old yarn to be cast off as in the sketch at right showing regular latch-needle knitting. Instead, the needle is raised only high enough for the old yarn to lower about halfway on the latch.



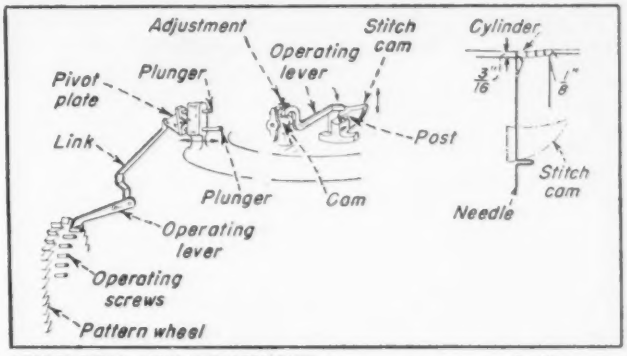
THE THUMB THREAD is inserted by means of three operating screws placed in the lower row of holes in the inner face of the pattern wheel. As the wheel revolves, these screws lift the operating lever which raises the rod. The rod, when lifted, strikes the pins in the cammed disk. The cam pushes the slide in. The raising cam, attached to the slide, is also pushed in. In this position, the slide will contact a long-butt needle but will miss a short-butt needle. The thumb thread is supplied to the long-butt needles.

The operating lever remains up during two rounds. At the end of the second round, the rod strikes the third and last pin. The flat side of the cammed disk is turned to engage the slide. The slide moves forward again, taking the raising cam out of contact with the long-butt needles. The thread returns to the pickup anchor.



CHANGING THE YARN is done through four yarn fingers in the housing. One of the fingers is shown in action.

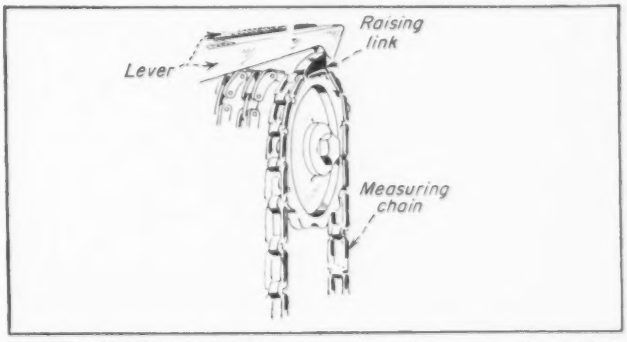
As the cylinder turns, one of the four slides strikes the plate. The plate is brought into proper position up or down to strike the right slide by the lever arrangement between it and the pattern chain. When the plate strikes a slide, the slide moves into the housing and lowers one of the three fingers, excluding the one in action. The yarn in the new finger is engaged by the new needle that is to knit. The finger in action and its yarn rise up out of knitting position, and the anchor catches the yarn.



STITCHES ARE LOOSENED to prevent too much distortion when color or pattern work is to be knitted into the palm section of the glove. To loosen the stitches, operating screws are placed in the inner side of the pattern wheel. The operating lever transmits a motion through the link to the pivot plate. The pivot plate pushes out or withdraws the two plungers.

As the cylinder revolves, the upper plunger (if it is pushed out) strikes the upper side of the cam. If the lower plunger is pushed out, it strikes the lower part of the cam. The cam is thus turned either clockwise or counterclockwise. This turning of the cam raises or lowers the stitch cam through the operating lever.

The adjusting screw can be used to adjust the distance that the needles are drawn down. As shown in the sketch at right, at $\frac{1}{4}$ in. below the cylinder top is the regular lowering of the right needle. The left needle is lowered $\frac{7}{16}$ in. as a result of the adjustment.



A MEASURING CHAIN and raising links operate the pattern wheel, striper chain, and trick-wheel chain as demanded by the pattern. Full-width or half-width raising links are placed in the chain to raise both or one of the two levers.

If a full-width link raises both levers to release the idling mechanism, the trick-wheel control chains, yarn-changer control chains, and pattern wheel start racking.

If a half-width link raises the outside lever, only the pattern wheel will rack. If the inside lever is lifted, the yarn-changer control chains and trick-wheel control chains will rack.

CONTROL BOARDS Speed Production at Rocky Mount

***All information** needed by the production manager in scheduling operations is on the control boards. Rubber bands around machine replicas on the floor plan at the lower part of the board indicate job assignments.*

***HIGHLIGHTS:** Charts in Rocky Mount Mills control room give machinery, product, and job information—Production changes made more simple and accurate—Board for each department shows models of machines on miniature floor plan.*

By JOHN M. GREGORY

USE OF MODERN CONTROL BOARDS, originated and devised by P. F. Morris, industrial engineer of the Rocky Mount Mills, Rocky Mount, N. C., has brought an almost push-button control to products and job assignments. The boards give product, machinery, and job-layout information required by production managers and department superintendents in five departments: carding, spinning, winding, twisting, and finishing. The mill manufactures carded cotton yarns.

Each board is 2½x3 ft., held in a frame from which it may be removed for changes. All five boards are kept in the control room next to the office of W. L. Jones, production manager. They are suspended on pivots so that each may be swung into view. An individual duplicate board for each department is placed in the office of each department superintendent.

Each control board is divided into two parts. The upper part, in three sections, has ruled and classified cardboard forms covered by transparent vinylite sheets. Symbols and information are written on the vinylite, and may be changed or erased if desired. The name of the department is printed in large black letters on the top center of each board. The three sections are labeled, "Product Layout," "Machinery Layout," and "Job Layout."

"Product Layout" shows the number of machines and total deliveries in production for each product being manufactured. Also the standard production per machine or delivery hour.

"Machinery Layout" gives specifications for each group of machines. A code on each machine replica—as explained later—shows the machine number, also a symbol for referring to the "Machinery Layout" for size, make, deliveries per machine, etc.

"Job Layout" shows the percent load that each productive and non-productive job carries within each occupation.

The lower section of each control board has a miniature layout of department floors. Machines are shown by small wooden replicas scaled ☆ in. to 1 ft. attached to the base. The models are in the exact locations that the machines they represent occupy on the mill floor. Replicas are painted different colors—carding machines: orange, yellow, blue, and green; spinning machines: black, and so on. Machine number and code is pasted on top of each.

When an operator is assigned a number of machines, pegs in the base surrounding those machines are encircled by colored elastic bands, the color designating the job. Additional information is conveyed by removable colored pegs and pins at ends of each model. For instance, each machine has one or two pegs, each peg representing one machine or one side. An arrow pointing upward shows the side when one machine is split between two operators. Pegs inside the rubber bands show number of sides or machines for each machine operator.

Job-number pins are placed within each rubber band. These pins represent an assignment which refers to a corresponding number on the "Job Layout," showing the percent load for that job.

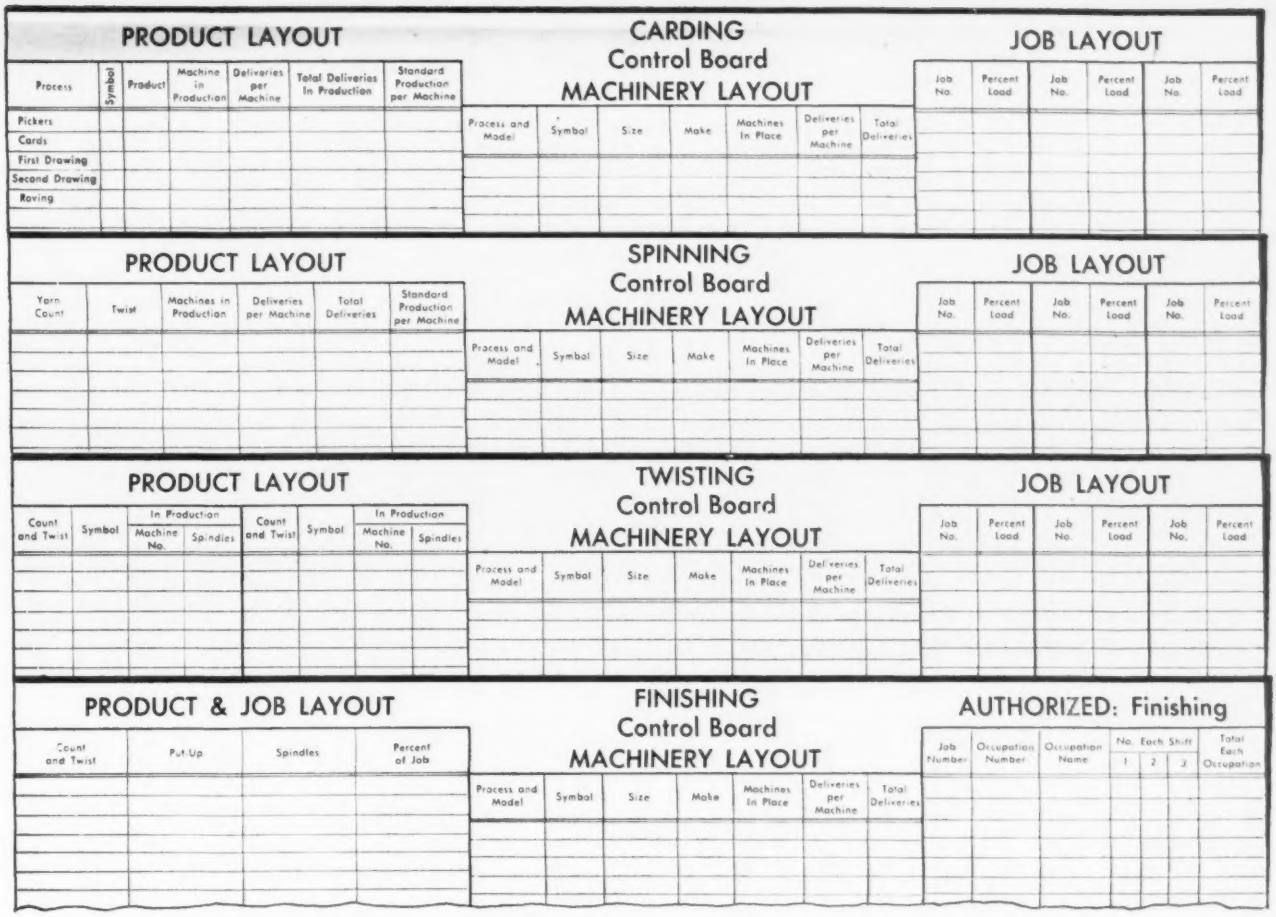
All colored pegs and pins have specified meanings shown by color guides attached to the boards. For example, 22 colors are used for single counts. This number may be increased by combinations.

On some processes, the product being run is identified by colored tacks for single counts. For others, it is identified in a Kardex by flexible inserts and sliding color signals for plied counts.

A supplementary Kardex system gives immediate information to be posted on the control boards when changes in production are ordered. These transferable charts are bound in a metal container retained in the office of the department superintendent, with duplicates in the control room.

A chart, labeled "Authorized Labor," on the left side of the container, is designed to show the job number and machine load for non-productive jobs. Productive jobs are shown on the "Machinery Layout" board, explained above. The chart also shows occupation number and name, the number of jobs authorized for each occupation per shift, the total of all jobs on all shifts for each occupation, and a grand total for the department, including all occupations authorized.

Charts on the right of the Kardex container show standard labor practice, production standards, and technical information. Standard labor practice shows the standard work load. It is scaled to show the percent load that a machine or machines would represent



***Headings on control boards** indicate type of information available. Floor plans are mounted below these charts.*

for any product being run. Production standards are expected production per machine or delivery hour from the process, and the finished production expected after waste loss.

The technical information chart gives complete data for making a production change. A production change notice gives the department superintendent information on machines to be changed, what product is to be run, what it is to be made from, gears to use, speeds to be run, etc. The complete job assignment is given to productive operators affected by the change, showing machines they should operate, with the percent load they must carry, and the amount they may expect to earn per hour.

By use of the production control charts, the following information may be obtained:

1. The number of machines required to supply a given number of other machines.

2. The number of hours that one or more machines may be stopped after a given weight has been accumulated.

3. The weight that will be produced by one or more machines in a given time.

4. The weight that must be produced to allow one or more machines to be stopped for a given length of time.

5. The gain or loss in weight accumulated that may be expected in a given number of hours.

When an order for a change arrives at the control room, the production clerk consults the Kardex charts. From information on the charts, he fills in a production-change notice in triplicate. One copy goes to the production manager. Another goes to the department superintendent who makes necessary changes on his board, then turns the order over to a foreman to carry out the change. The final copy is retained by the production clerk, who makes the changes on his board and files the copy.

Ability to visualize products and labor layouts is one of the most important time-saving features of the control boards.

Their use is not confined to the production department and department superintendents. Timekeepers, laboratory clerks, and training director find constant use for them. Time records may be made without consulting department superintendents.

Laboratory test clerks may determine the machine from which scheduled counts are to be tested.

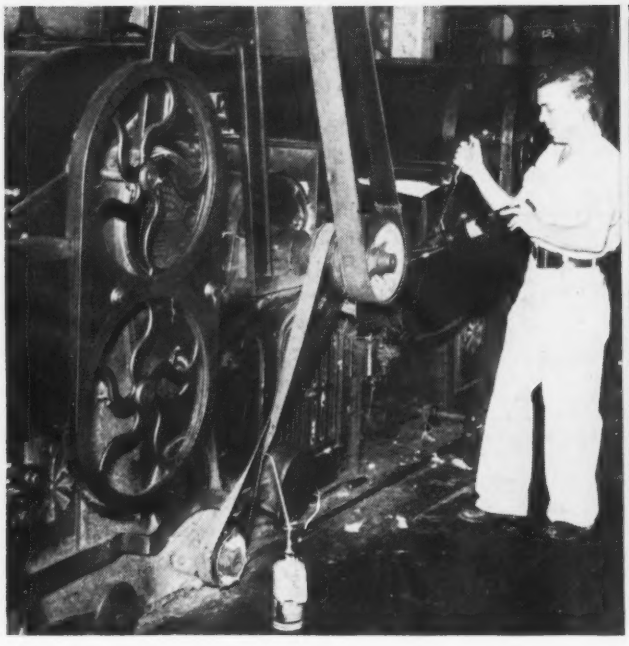
Frank Hay, trainee instructor, uses colored slides of the boards to explain textile problems to young men undergoing training.

Description of these charts and boards in type make them seem complicated. Practical application, however, is simple. Those who use them say they help to do a better job. Department superintendents get a more efficient product and labor layout. A glance at a board in each department shows whatever information that may be desired.

These boards, according to Mr. Morris, may be adapted to other textile mills with necessary changes. Improvements are being added constantly. They have been in operation at the Rocky Mount Mills over nine months.

W. L. Jones, production manager, said their use has improved immeasurably efficiency in planning. General Superintendent Laughridge said they save time and money. Troy L. Phelps, superintendent of spinning, said the boards enabled him to see instantly what load each machine and worker was carrying, and the counts being spun.

Entire credit for conception and execution of the control boards is due P. F. Morris, according to Production Manager Jones. Mr. Morris took over a year to complete the boards.



***Special grease guns** and oil cans are used to simplify the task of lubricating and to insure the proper amount of lubricant.*

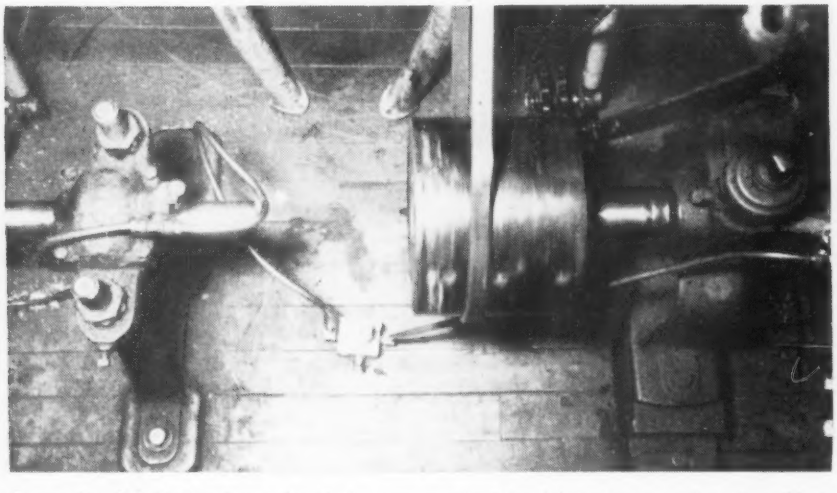
***Motors, gears, and cams** are inspected at the time they are lubricated.*

LUBRICATION SYSTEM
Reduces Machine Stops

***HIGHLIGHTS:** Four-point lubricating program includes type and amount of lubricant, frequency of application, and personnel responsibility—Richmond Hosiery Mills increased its lubricant cost but decreased production loss—Specialists trained for critical lubricating jobs.*

By E. DALTON WHITE

A LUBRICATING SYSTEM whereby responsibility for proper lubrication is fixed for each section of the mill has been developed at Richmond Hosiery Mills, Rossville, Ga. Lubricating schedules have been arranged, and each point where a lubricant is applied has been labeled as to the type of lubricant and frequency of application. Proper equipment has been provided



***One-point lubrication** has reduced the time required for lubricating a series of machines. The drive shaft and bearings for a line of circular knitting machines are lubricated by pressure through copper tubing.*

***Working parts** of roving and spinning frames are lubricated according to a schedule.*

so that hard-to-reach points can be easily lubricated. So successful has the program been that there has not been a stoppage of machinery that could be attributed to lack of lubrication.

Before the new system was installed, there was no rigidly set schedule of lubrication. Machine fixers lubricated all machines on their sections, and the electricians lubricated the motors on a monthly basis. Some machine operators were responsible for the lubrication of their machines. Each department ordered what lubricants were needed.

The number of machine stoppages and the cost of maintenance, particularly parts replacement, led A. L. McCall, superintendent, to make a complete analysis of lubricating practices. His analysis included the amounts and types of lubricants used, the methods and frequencies of application, and the personnel who applied the lubricants. His conclusion was that systematized lubrication was needed.

LUBRICATION SURVEY. A lubricating engineer made a survey of the mill and recommended specific lubricants for each machine. A central oil-and-grease department was organized to bear the responsibility for the procurement and disbursement of all lubricants. Two oilers, under the supervision of the plant engineer, were trained in all phases of lubrication. Their responsibilities and duties were defined, and lubricating schedules were established.

Major lubricating activities are on a two-shift schedule so that one of the trained lubricating men is always available in case of emergency or special work.

In order to avoid errors in the type of lubricant and the frequency of application, the mill adopted the Alemite "coloroute" system. Each lubricating point was carefully marked with decals of certain shapes and colors to indicate certain types and frequencies of lubrication.

Lubrication is divided into three classifications:

1. *Fast-motion oiling.* This oiling is done by section hands and fixers and includes machine parts that require oiling as frequently as once each shift or oftener.

2. *General.* This oiling is also done by section hands and fixers and includes knitting machines and certain parts of spinning, sewing, and looping equipment.

3. *Heavy duty.* This type of oiling includes motors, line shafts, elevators, etc. Lubrication of this class of equipment is the responsibility of the lubricating specialist.

Lubrication Schedule

Part or Machine	Lubricant	Time
Preparatory and Spinning		
Waste baler	SAE 20, viscosity 55 at 210° F. (320/340 at 100° F.)	Daily
Opener & picker	SAE 20	Each shift
Bearings	Heavy fibrous lubricant (Melting point 340° F.)	Monthly
Cards		
Cylinders (fast bearings)	SAE 20	Each shift
Lickerins	SAE 20	Each shift
Doffers	SAE 20	Each shift
Stripper combs	SAE 20	Each shift
Barrow pulleys	SAE 20	Each shift
Comb pulleys	SAE 20	Each shift
Comb boxes	Concentrated heavy and adhesive oil	Weekly
Worm boxes	SAE 140 extreme-pressure gear oil	Weekly
Vacuum stripper	SAE 20	Weekly
Coiler heads	SAE 20	Weekly
Feed rolls	SAE 20	Weekly
Cylinder lickerins, and doffers (slow bearings)	Heavy fibrous lubricant	Pack each 3 mo.
Lappers	SAE 20 and extreme-pressure SAE 140	Each shift
Combers (fast bearings)	SAE 20	First shift only
Drawing	SAE 20	Each shift
Intermediates	SAE 20	Each shift
Spinning frames	SAE 20	Each shift
Twisters	SAE 20	Each shift
Warpers	SAE 20	Daily
Winders	SAE 20	Each shift
Spindles on spinning frame	SAE 30 concentrated oil	Every 2 wk.
Spindles on twisters	SAE 30 concentrated oil	Weekly
Heads on spinning frames	SAE 20	Daily
Heads on twisters	SAE 20	Daily
Rollers	SAE 20	Each shift
Ball bearings	High viscosity, medium body, insoluble, melting point 220° F.	Monthly
Winders and Related Equipment		
Heads and cam rollers	Heavy fibrous lubricant	Weekly
Hangers and spindles	SAE 30 concentrated oil	Weekly
Guides, dogs, bars	SAE 20	Weekly
Cam bearings	High viscosity, medium, insoluble	Each 3 mo.
Top and bottom bearings	Heavy fibrous lubricant	Monthly
Chain-pulley bearings	Insoluble, high viscosity	Once each yr.
Fabric bearing on winder	Insoluble, high viscosity	Each 6 mo.
Rocker arms	SAE 20	Weekly
Dogs (dye)	SAE 20	Twice daily
Step	SAE 20	Weekly
Traverse arms	SAE 20	Weekly
Knock-off	SAE 20	Weekly
Conveyor	High viscosity, medium, insoluble	Each year
Cams	High viscosity, medium, insoluble	Twice weekly
Roller bearings	High viscosity, medium, insoluble	Each 3 mo.
Conveyor roller	High viscosity, medium, insoluble	Yearly
Motors, cams, gears	Lubriplate #4, Sulriplate #4, or comparable #40 motor oil	Weekly
Bobbin gage	Concentrated oil, approx. SAE 30	Weekly
Top and bottom carriage	SAE 10	Monthly
Cone spindles	Concentrated oil, approx. SAE 30	Weekly
Other Equipment		
All open gears	SAE 140	On inspection
Brush shaft	SAE 20	Twice weekly
Electric rolls	SAE 20	Every other day
Gear end, Elec. rolls	SAE 20	Every other day
Top and bottom coiler heads	SAE 20	Twice weekly
Backs	SAE 20	Weekly
Steps	SAE 20	Each 2 wk.
Spindles	SAE 20	Each 2 wk.

LUBRICANT SELECTION. Selection of grease and oil was made after study of each piece of equipment. Efforts were made to reduce to a minimum the number and types of lubricants in order to simplify the work of lubricating and reduce oil and grease inventory.

It was found that an oil originally designed for bakeries and canneries was best suited for needles and spindles. It is a white oil that easily works out and has good lubricating properties. The problem of motors running hot because of accumulations of dust and lint and requiring periodic flushing and cleaning of bearings was attacked by the installation of self-sealing oil caps. Motors in the spinning room are now blown out once a week at the time of oiling.

The lubricating crew checks for loose connections, beltings, etc., on each motor and tests for possible short circuits. This precaution has proved helpful in reducing maintenance costs and stoppages. When trouble is discovered, it is immediately reported to the electrician.

Since the institution of the lubricating system, the cost of oil and grease at Richmond Hosiery Mills has about doubled, but maintenance and repair costs have decreased sharply.

Lubricating engineers recommend careful selection of the type of lubricant for the various uses and also proper application of the oil or grease. In many cases, more actual damage results from overlubrication than from insufficient lubrication. Bearings of

(*Continued on page 226*)

Counting, folding and separating towels by style, color, and count end the dry-finishing operations. From this point the towels go to the shipping room for packaging.

Finishing TERRY TOWELS Requires Adequate Routines

HIGHLIGHTS: *Proper methods and well-trained personnel are considered keys to manufacturing success at Muscogee Mfg. Co., Columbus, Ga.—Maintenance-cost record on each machine and operator provides index to performance—Department operated 850,000 manhours without a lost-time accident.*

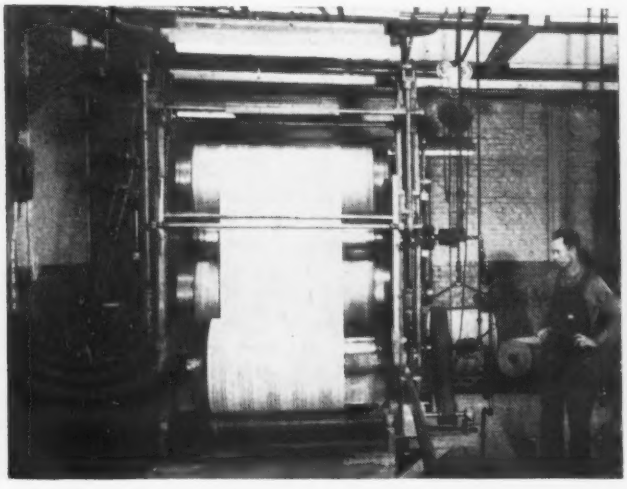
By W. A. HOLTON, *Muscogee Mfg. Co.*

FINISHING TERRY TOWELS and bed tickings is "big business" at Muscogee Mfg. Co., Columbus, Ga. One of the world's largest producers of these goods, the mill operates 35,000 spindles and 1,140 looms on towels, terry toweling, bath mats, wash cloths, and ticking. Modern machinery, improved working conditions, employees' health, and safety and training programs are factors that are given particular attention as contributors to production and quality.

The flow of goods through the wet-finishing and dry-finishing departments is as follows:

Cloth doffed from the looms in the three weave rooms of Nos. 5 and 6 mills is inspected in the gray for defects and the rolls sewed end to end. The goods are segregated according to color, weight, and width and are put up in truckloads of 600 to 800 lb. Lots of 6,000 lb. are accumulated for bleaching. After being bleached, goods are put through washers and brought to the open width on scutchers and mangles operating in tandem. They are then dried on a Proctor & Schwartz loop dryer and plated in stacks on trucks or boxes.

CUTTING AND HEMMING. The goods are cut with round-blade electric



***Five-roll, steam-heated calenders** give the final finish to fancy bed ticking. The ticking is thoroughly brushed and sheared.*

***Cutting and grading** terry towels are done by two operators at each table. Round-blade electric cutters are preferred at Muscogee.*

***End hemming,** right, and clipping the towels apart, center, prepare them for folding and tying.*

***Overedging bath cloths,** like end hemming, requires skill, coordination, dexterity, and good vision.*

cutters, graded closely by well-trained inspectors, and placed on storage racks in readiness for the end-hemming operation.

End hemming requires a considerable degree of skill, coordination, and dexterity; and quality workmanship at this operation is directly reflected in the end quality of the towel. A training period of 6 to 12 weeks is usually required for a new employee to develop the necessary skill for hemming.

The towels are clipped apart, folded, and tied in packages of either one or two dozens with Saxmayer bundle machines. Styles and colors are grouped, placed in boxes, and trucked to the wrapping operators. After being wrapped, the towels are identified as to style, color, and count.

Practically the same procedure is followed in finishing bath cloths and terry cloth. Bath cloths are overedged with individually driven overlock machines, trimmed, and put up in packages of five dozens. The terry cloth is delivered from the loop dryer to the inspecting tables, where it is inspected on both sides for weaving imperfections, off shade, and off width. It is then rolled on a winder, wrapped, and labeled.

Bed tickings are all woven in single cuts, doffed from the looms, and inspected in the gray room. Imperfections are flagged in the selvage or cut out, depending upon the size and type of the defect. The goods are trucked to the finishing room, grouped according to styles and patterns in lots of 16 to 18 cuts, and weighed. From this point, they move to the railway machines, where the ends are sewed together and the cloth is batched in rolls of approximately 1,000 yd.

To insure cleanliness, the goods are brushed and sheared; and the proper hand is obtained by putting them through steam-heated five-roll calenders. They are then folded on 1¼-yd. cloth folders, the final inspection for defects, width, and shade being made during the folding operation. The folded cloth is tacked so that the package is held together, identified, weighed, and baled.

STARTING NEW EMPLOYEES. One of the most important considerations in the operation of a department as large and complex as the finishing department at Muscogee is the selection and training of new employees and the transfer of old employees to new jobs. Care is taken to select only physically fit employees. For some jobs, such as operating sewing machines, workers with good vision are required.

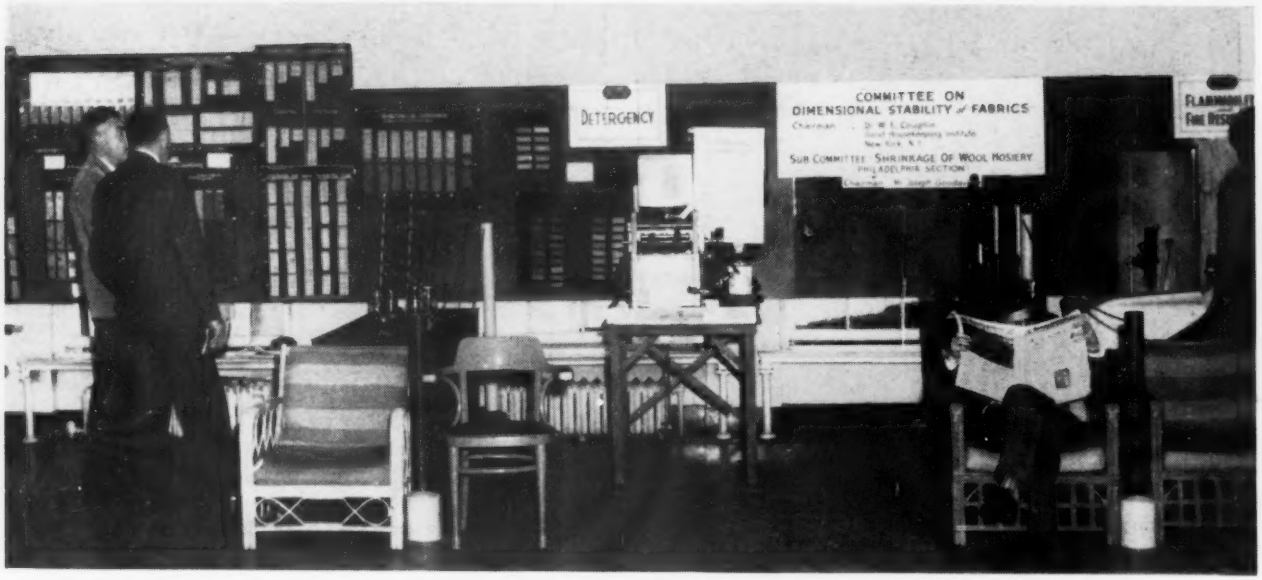
When an employee is assigned a job that is new to her, all the details of the job are explained carefully so that she will have a clear idea of what is required by the job. She is shown the operations preceding and following her own operation so that she will sense the flow of operations and realize the importance of her job and how it fits into the manufacture of a finished product.

Special effort is made to have her "feel at home." She is first introduced by the foreman to his assistants, to the employees with whom she will work, and to the person who will instruct her in her new job. Instruction proceeds slowly, care being taken not to deluge the new employee with strange details. As the instructions proceed, the employee is soundly "educated" in the operation and care of the machine, proper motions, and safety. Her progress is checked periodically by the supervisory staff of the department.

Considerable effort has also been made at Muscogee to work out routines to meet the problems of maintenance cost, machine inspection, and

(*Continued on page 216*)

***Inspecting and folding** bed ticking is done simultaneously on the 1¼-yd. folder in the background. The folded goods are tacked to maintain a neat package.*



Establishment of test methods, such as those shown here, was stated to be one of chief functions of the AATCC.

High-Temperature Dyeing Permeates AATCC ANNUAL

HIGHLIGHTS: *Vat procedures emphasized—Continuous dyeing of wool fabrics foreseen—Many printing methods available today—Continuous processing being improved greatly.*

VAT AND HIGH-TEMPERATURE DYEINGS, together and separately, highlighted the technical papers presented at the annual meeting of the American Association of Textile Chemists & Colorists in Augusta, Ga.

The advantages discovered in the use of dextrine in dyeings won for the Piedmont Section the intersectional contest, held during the convention. Use of a spectrographic method to study chemical reactions in dyeing and finishing was described in the Northern New England Section contest paper to win second prize, while third honors went to the Philadelphia Section for its information on high-temperature dyeing.

These, and other technical papers presented at the three-day session for "Advancing Textiles Through Research," the convention theme, are abstracted in the following.

Stability of Vat Colors at Elevated Temperatures

Piedmont Section Contest Paper

First Prize Winner

It has been found that dextrine offers worth-while advantages in saving dyestuff and time, increased penetration of the fibers, and greater uniformity of dyeing from one bath to another.

In addition, partial restoration of a dye bath that has undergone some degradation is practicable by the use of dextrine. Shade trueness can also be preserved if dextrine is used under stripping conditions. Another important use is in dyeing hosiery with vat colors. However, it is not recommended for vat blues.

One of the important advantages in the use of dextrine is in stabilizing reduced solutions of vat colors at high temperatures.

Summaries of two other technical papers presented (on knit-goods) appear elsewhere in this issue—Ed.

A Spectrographic Study of Treated Textiles

Northern New England Contest Paper

Second Prize Winner

A spectrographic method developed permits textile materials to be broken up into their component radicals which are then made to radiate characteristic band-emission spectra.

The method permits the qualitative detection of finishes, the quantitative determination of the amount of finish, the study of the interaction of resins and textile fibers, the identification of fibers, the differences in the cure of resins, and the study of the degradation of textiles.

The method is especially useful for studying melamine finishes; and, in the case of wool, proves that melamine reacts with the wool fiber. The spectrograph can show the function of catalysts, of curing time and temperature, and so can speed up production of treated fabrics.

A chart has been worked out to speed the identification of fibers. One advantage is that a single fiber can be tested.

Some Phases of High-Temperature Dyeing

Philadelphia Section Contest Paper

Third Prize Winner

High-temperature dyeing of wool, say at 250° F., points to the practicability of continuous dyeing of woolen and worsted cloth. It has been found that with one class of vat dyes at pH of 2 to 6, 2 min. at 250° F. gave results equal to 1 hr. at the boil; for milling and metalized dyes, 5 min. equalled 30 min. at the boil. Diffusion, penetration, and color transfer were all greatly speeded up on wool treated at high temperatures. Increase of the order of ten times was found.

Seven points found in high-temperature

Major trends in textile wet processing were cited by C. Norris Rabold, AATCC vice president, as welcoming of technically trained personnel by mills and increased use of scientific operating methods, such as by use of continuous, controlled ranges.

H. M. CHASE IS OLNEY MEDALIST

The first southerner to receive the Olney medal is Harold Mason Chase, director of research of Dan River Mills, Inc. Presentation is being made by Henry F. Herrmann, president of the AATCC.

dyeing of wool compared to dyeing at the boil are: (1) exhaustion can be as complete, (2) fastness is as good, (3) fiber stability is satisfactory, (4) wide selection of colors available, (5) more complete transfer promotes level dyeing, (6) improved diffusion penetration, and (7) greatly increased speed of dyeing.

High-temperature dyeings of cotton, nylon, acetate rayon (estron), and viscose rayon show less advantages than found for wool. On cotton, better leveling was found for sulphur, direct, and vat-pigment dyeing. Sulphur dyes also showed better penetration. Acetate lost 50% of its breaking strength at 250° F. and little profit was expected. On viscose, diffusion and transfer were found to increase with temperature rise for direct dyes. Nylon was found to be weakened when heated for 1 hr. at 248° F. in the presence of certain dyeing agents. Dye take-up was greatly increased at the higher temperature.

All fibers tested showed more complete transfer of color at higher temperatures. Many dyes that are difficult to level at the boil were found to be level dyeing.

The Solubilization of Dyestuffs With Surface-Active Agents

Mid-West Section Contest Paper

Surface-active agents serve as true solubilizing agents for a number of the dyestuffs in current dyeing usage. The absolute effect observed appears to be greater for the more insoluble dyes.

Micelle formation is evidently necessary to account for this phenomenon; and, consequently, beyond the critical point, increased detergent concentration results in greater solubilization. Salts function to lower the critical concentration of detergents required for micelle formation and hence for appreciable solubilization.

Dyeing trials conducted on staple nylon suggest that there may be an optimum solubility range of the dyestuff to produce the best dyeing properties, greater solubility exerting too great a retarding effect and lesser solubility giving rise to unevenness.

The indications shown of a relationship between two solubilizations and dyeing properties on staple nylon may also carry over on acetate.

Some Conditions Affecting the Application of Vat Colors

Rhode Island Section Contest Paper

Some vat colors suitable for dyeing have given poor results when used in printing. However, it has been found that if the optimum conditions for each color are obtained, most vat colors are suitable for both dyeing and printing. But it is still not commercially practicable to print some vat colors.

Moisture was found to be an important factor. The type of alkali, such as carbonate or hydroxide, gave widely varying results with different dyestuffs. The concentration of alkali necessary to affect reduction and dyeing was relatively small. As the concentration increases over this minimum, the color yield diminishes rapidly. The results obtained with varying concentrations of alkalies appeared to have significant practical values. The ease of reduction varied widely from color to color under equal conditions of time, temperature, and chemicals. Temperature affected the rate of reduction and exhaustion in dyeing. In the ageing of prints, the temperature determines the relative humidity and moisture absorbed, which influences the color yield. With glycerine as a solvent medium, the temperature affected the color yield of certain vat dyestuffs. Hygroscopic agents or solvents materially affected the results in printing.

The Effect of Sulphur Black on the Tendering of Cotton Yarns

Southeastern Section Contest Paper

Sulphur-black dyeing on cotton has been found to cause the fabric to become tender upon ageing. The tendering is presumed to be due to the production of sulphuric acid which weakens the cotton. It has been found that such tendering can be decreased by aftertreatments with alkaline agents.

Mercerized cotton yarn resists the tendency to lose strength more than unmercerized; but retreatment of yarn with alkaline agents prior to dyeing has no influence on the subsequent resistance to tendering. It appears that aftertreatment is feasible in commercial runs.

Modern Trends in Piece-Goods Preparation, Dyeing, and Finishing

By C. NORRIS RABOLD,
Erwin Cotton Mills Co.
and Consulting Editor, TEXTILE WORLD

General adoption of continuous-processing methods is the second major trend in finishing piece goods; the first is adoption by the industry of technically trained personnel and scientific operating methods. [See editorial on page 4—Editor]

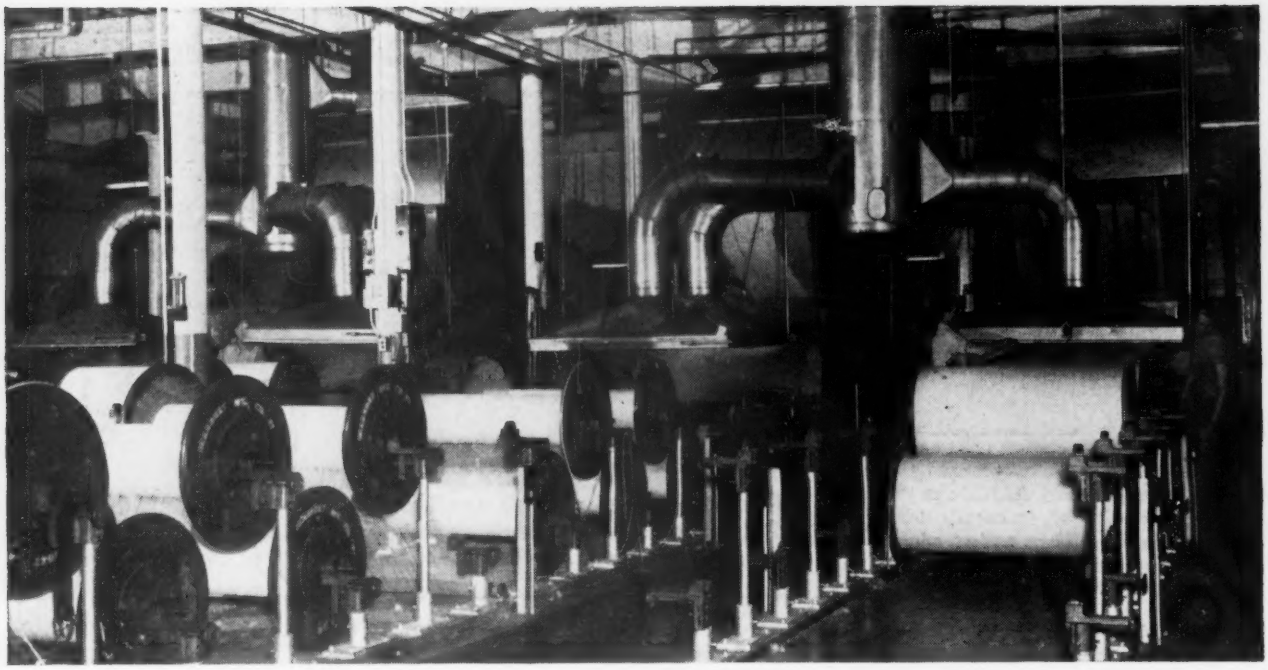
Today, ranges, both rope and open width, are used to bleach heavy as well as light goods. Speeds have gone up to 250 to 300 yd. per min.; and soft-motor drives, operating from motor-generator sets, solve the problem of synchromism.

Washers today use hot water and provide for agitation to force water through the cloth. The newest type combines agitation with minimum tension. Needle sprays are sometimes used in washing. Under experimentation is a washer which carries the cloth at high speeds through tubes while water is forced through it. It has been found out that gallons of water used is not an accurate criterion of the degree of the washing done.

Continuous dyeing is advancing to include even heavy shades of vat colors, largely through padding on the color in pigment form.

Range finishing requires that tenters, cans, loop and lay dryers, and curing equipment must be built with precision. Both direct and indirect fired dryers are

(*Continued on page 208*)



Slasher-room improvements at Beaumont Mfg. Co. include ball-bearing section-beam stands; exhaust hoods; and automatic controls for cooking, size-box level, stretch, and moisture content of the warp.

CONTROL of SLASHING Increases Warp Production

HIGHLIGHTS: *Same labor, same cost produce 20% more warps at Beaumont Mfg. Co.—Sets of 1,264 to 4,400 ends of 14s to 18s yarn slashed at 30 to 74 yd. per min.—Three-cylinder slashers do most of the work.*

By E. DALTON WHITE

INSTALLATION OF AUTOMATIC CONTROLS, variable-speed motors, overhead conveyor system, materials-handling devices, and other improvements have provided Beaumont Mfg. Co., Spartanburg, S. C., with one of the most modern and efficient slasher rooms in the textile industry. A production increase up to 20% and corresponding lower unit cost have been realized.

Control starts with the making of size, where the ingredients of each mix are carefully weighed and water level, temperature, and cooking time are regulated. It continues throughout the slashing operation, with temperature, speed, moisture, viscosity, and other variables in the operation being automatically controlled.

The mill's production is chiefly in yarns ranging from 14s to 18s, in sets varying from 1,264 to 4,400 ends on 22-in. and 26-in. loom beams. Slashing speed ranges from 30 to 74 yd. per min. Size added amounts to about 10%.

Both two-cylinder and three-cylinder slashers are in use. Besides variable-speed drives and controls, the slashers are equipped with ball-bearing section-beam stands and exhaust hoods. Stainless-steel hoods over the size boxes and cylinders are connected with a control duct through which hot air is exhausted to the roof.

STEAM PRESSURE. Steam pressure is maintained at 10 to 12 lb. for heavy warps and 4 to 6 lb. for light warps. Condensate from the cylinders is removed by siphon and drained into the boiler return line.

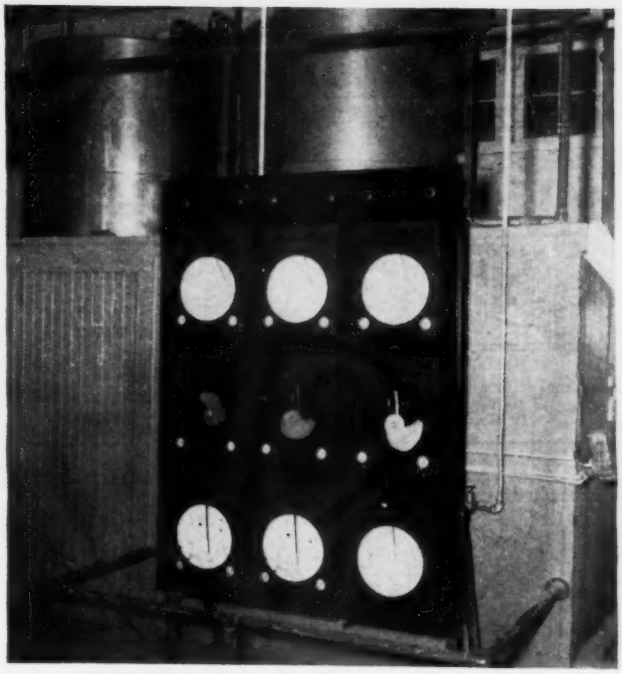
Push-button emergency controls to regulate speed have been placed on each side of the slashers. There are five such stations on each side, spaced within easy reach at any point where trouble might develop.

The slashers are driven by Westinghouse variable-speed motors, controlled through Brown-instrument systems. The level in the size box is automatically controlled at a predetermined level. The Norcross viscosimeter is set at an average of 45.

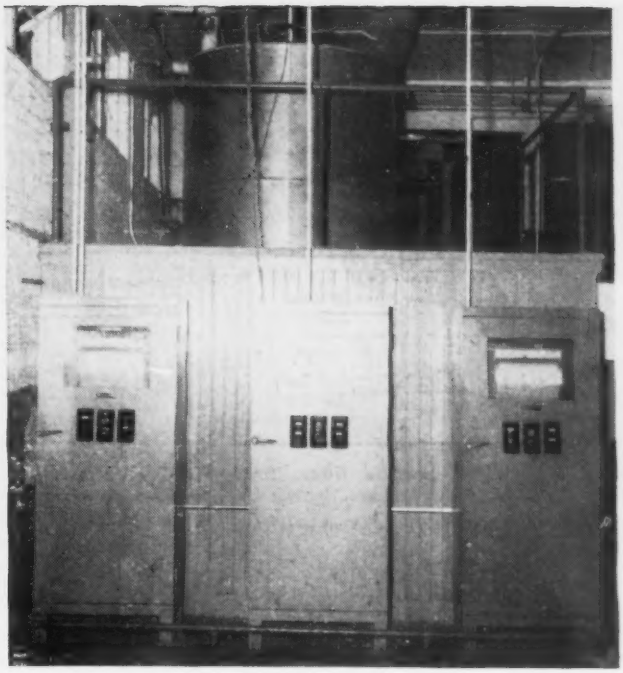
Both front and back squeeze rolls are covered with all-wool blankets. New blankets are first put on the back roll and then transferred to the front roll after a break-in period of two to three days. Blankets are changed every three to four days when the slasher is operating on a three-shift basis.

Stretch is controlled between the size box and the cylinder by a rheostat that controls the speed of the rolls in relation to the speed of the cylinder. Stretch is checked by measuring the yarn before it enters the size box and after the slasher operation. About 1.5 to 2.5% stretch is maintained.

Beaumont uses three size-cooking kettles and two size-storage kettles. The size cooking is controlled through



***The cooking cycle** is controlled through this instrument panel. A red light signifies that cooking is under way; a green light indicates that the cooking cycle is completed.*



***The slashing operations** on the three-cylinder slashers are controlled through these instruments by means of variable-speed drives. About 8% moisture is left in the warps.*

Brown instruments. When cooking is started, the control panel flashes a red light which remains on until the cooking period is over. A green light then flashes on to indicate that the cooking cycle is finished.

SIZE COOKING. To make the size batch, the cooking kettle is filled with water to a set level and the agitator is put in motion. Starch is slowly added. When the temperature reaches 190° F., the compound is added. It requires about 45 min. for the temperature to reach 205° F. The size batch is cooked at that temperature for 45 min.

In making 300 gal. of finished size, Beaumont uses 280 lb. corn starch, 28 lb. binder, 11 lb. softener, 4 lb. wax, and 2.5 lb. Aktivin.

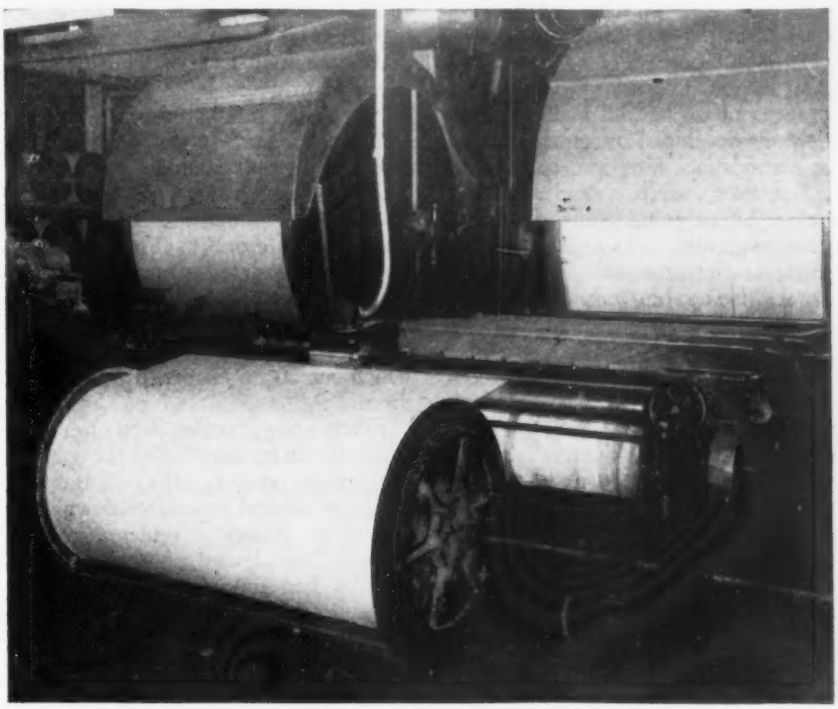
Slightly less water than is required is pumped into the cooking kettle at the start of operation, since the kettles are heated with live steam. Hot water is added to bring the mix up to 300 gal. before size is stored.

The three 400-gal. copper-lined, steel cooking kettles are insulated with asbestos and have a stainless-steel outside jacket. The two 600-gal. storage tanks are lined with stainless steel, insulated with asbestos, and covered outside with stainless-steel jackets.

Size in the storage tanks is maintained at a temperature of 200° F.; that in the size box at 205° F.

The entire slasher room is equipped with an overhead monorail conveyor system so that beams can be transported to any part of the room for storage or processing. The beams are stored in three-tier steel racks. Loom beams are stored in similar steel racks located on each side of the slasher room. Drawing-in is performed in a marked-off area of the room. The entire room is lighted with fluorescent lights, with additional light obtained from the windows on three sides.

The layout of the room was designed for ease of operations and handling materials and for easy access to the weave room at one end of the slasher room. Installation of the automatic controls and improvements in slasher operations are part of a broad expansion and improvement program now in progress at the mill.



***Control point** of the slashing operation is the moisture-sensitive roll in front of the condenser comb. Speeding or slowing the slasher drive results from a decrease or an increase of moisture directly under the roll.*

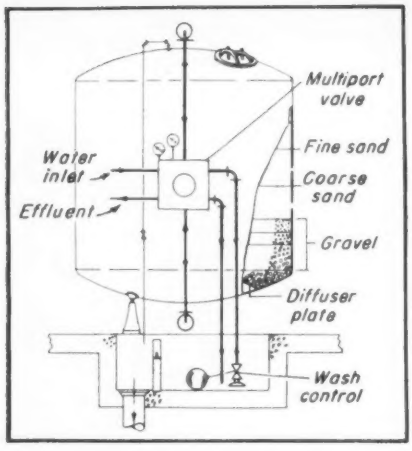


Fig. 1. Vertical pressure filters force water downward under pressure through the granular filtering bed.

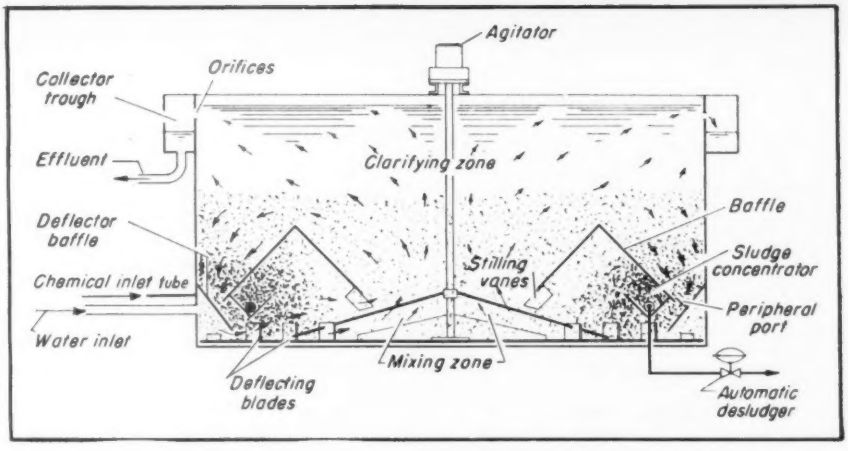


Fig. 2. Water to be purified passes upward through an agitated sludge bed. Decreased agitation above the bottom of the tank combined with the radial flow permits separation of purified water.

Modern Equipment Removes WATER IMPURITIES

HIGHLIGHTS: *Eight methods available to textile mills for removal of impurities—Suspended matter usually removed by settling, coagulation, or filtering—Iron and manganese removed by oxidation, settling basin, or ion-exchange methods.*

By V. J. CALISE

Liquid Conditioning Corp., Linden, N. J.

TREMENDOUS STRIDES have been made in the last 15 yr. in developing low-cost processes and equipment to meet the demand of textile mills for water of higher and higher quality. Methods developed or improved upon are clarification, filtration, coagulation and settling, aeration and filtration, contact filtering, basin settling, sludge contacting units, and sodium and manganese zeolite processes. These methods are the modern means of obtaining this higher quality water at low cost.

Clarification can be used to remove such impurities as turbidity, sediment, color, organic matter, and certain iron and manganese compounds. Turbidity is finely divided, as contrasted to sediment which is coarser and more easily settleable. Color and organic matter, as well as some iron and manganese compounds, are frequently in solution as well as in suspension, but their removal is accomplished by methods similar to those used for removal of turbidity.

Suspended matter, in general, is removed either by settling, coagulation, or filtration, or by a combination of these methods. Simple filters may be used alone if the amount of suspended matter is small and the particle size is sufficiently coarse. If the amount of suspended matter is small but the turbidity present is too fine, simple filters are supplemented by chemical feeders. These feeders add coagulants to the filter influent to form a jelly-like precipitate or "floc" in the water. The floc coagulates or entraps the turbidity or color. The floc is caught on the top or finest layer of the filtering bed to form a "Schmutz-decke" which acts as an efficient filtering medium.

Filters using granular, deep filter beds to clarify water may be of the gravity or pressure type. In all cases, the water to be filtered percolates downward (either by gravity or under pressure) through the layers of the granular filtering bed in various graded sizes. An underdrain system collects the filtered water below the filter bed during filtration and distributes the upflowing backwash water during the cleansing of the bed. A backwash collector and inlet-water distributor are also included at the top. The usual cycle period

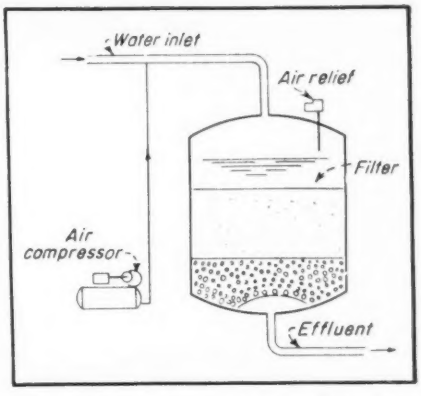


Fig. 3. Iron is removed by oxidation into insoluble ferric hydroxide by introduction of compressed air into water.

before backwashing is 8 to 48 hr., depending on the water being filtered. Fig. 1 shows a vertical pressure filter with multiport valve. The cost of filtration is usually only that required for power to pump the water through the filters. This cost is usually very low.

However, if the amount of suspended matter is too great, the filter becomes overloaded and requires too frequent backwashing to cleanse the filter beds. Also, if the color is too great, it cannot be removed by direct filtration only. It then becomes economical to precede the filters by coagulation and settling tanks, where most of the coagulated turbidity and color is separated from the water by settling.

SLUDGE-CONTACT REACTOR. The

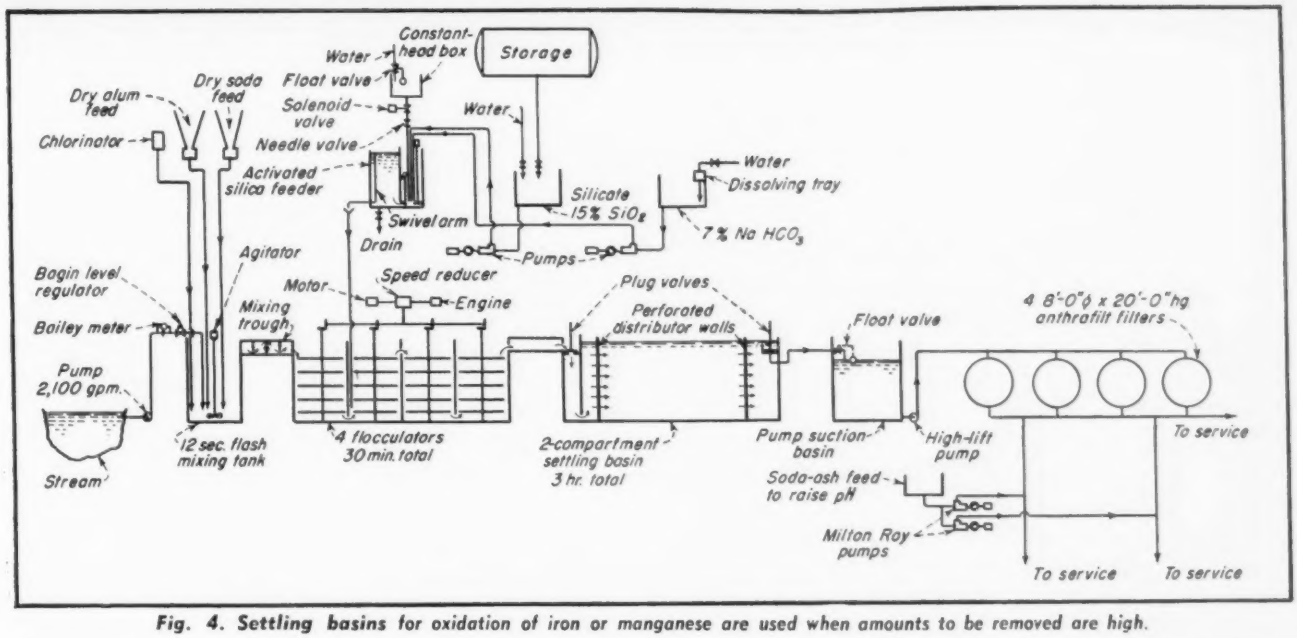


Fig. 4. Settling basins for oxidation of iron or manganese are used when amounts to be removed are high.

most efficient type of coagulation and settling tank is a sludge-contact reactor; a good design of this type of unit is shown in Fig. 2. This design represents the modern embodiment in one unit of the combination of four items:

1. Proper agitation and mixing of chemicals and water.
2. Sludge contact with a suspended deep sludge bed or blanket of previously accumulated precipitates.
3. Separation of the sludge from the water as the clear water emerges at the top of the unit.
4. Sludge concentration in internal concentration compartments in order to reduce the volume of sludge-blow-off water discharged to waste.

The precipitates are not allowed to settle out but are kept suspended by the slowly rotating agitator operating over the entire bottom of the tank. The water and chemicals enter the mixing zone near the bottom at the side where mixing is most efficient because of the relatively high tip speed of the agitator arm. The deflector baffle, together with the deflecting blades, induce the water to flow toward the central port, through which the sludge and water rise into the clarifying or sludge-separating zone. The water then flows radially and outwardly toward the orifices of the peripheral collecting trough. The radially outward travel of the water takes place in the unrestricted clarifying zone at gradually decreasing velocities until a velocity is reached sufficiently low to permit efficient separation of the water from the sludge.

Some of the water and sludge recirculates by returning through the peripheral port to the mixing zone. The top of the sludge is maintained above the inclined baffle separating the two zones.

In coagulating a water, coagulants such as alum sulphate, ferrous or ferric sulphates are added, and the pH value is adjusted to the optimum to assure the most complete and most rapid formation of the jelly-like precipitate or floc in large particles that are readily settleable. Thus, floc entraps or absorbs the finely divided turbidity or color.

In addition to controlling the pH value, it has been beneficial in many cases, especially for waters of low turbidity but of high color, to add various reagents that aid the coagulation. Both clay and activated silica have been effective for this purpose.

A sludge-contact reactor can be used equally well for coagulation of turbid, colored waters, for softening of hard well waters by lime-soda, for simultaneously softening and clarifying hard river waters, and for removal of iron and manganese by proper pH adjustment and sludge contact. Also, pH adjustment can be made for corrosion control.

Filtration with gravity or pressure filters is frequently practiced after coagulation or treatment in the sludge-contact reactor.

IRON AND MANGANESE REMOVAL. Iron and manganese may be present in water in various forms, depending on the source of supply. These are:

1. As ferrous and manganous bicarbonates in well waters when high amounts of free CO_2 are present.
2. As ferrous and manganous sulphates in rivers containing acid mine-waste waters.
3. Combined with organic matter as in swampy areas.

In addition, iron may be present in the water due to the corrosion of ferrous piping systems. Therefore, care must be taken to distinguish between iron present in the water at its source and iron picked up from the distribution system.

There are three types of iron- and manganese-removal plants as follows:

1. Aeration and filtration, with or without contact filters, settling basins, and chemical feeds for pH adjustment.
2. Manganese zeolite, with or without contact filters. This is also an oxidation process.
3. Sodium zeolite removing the ferrous and manganous cations by base exchange without oxidation.

The equation for the oxidation reaction of iron is as follows:

$$4Fe(HCO_3)_2 + O_2 + 2H_2O \rightarrow 4Fe(OH)_3 + 8CO_2$$

It can be seen that the amount of oxygen required is only 1/7 part for each part of iron as Fe. The ferric hydroxide formed is insoluble and can be removed by filtration, especially after a filter bed becomes seasoned or coated with the precipitate.

Waters high in alkalinity and total solids and free from high amounts of organic matter respond readily to aeration and filtration. The usual design of a small plant installed for this purpose is shown in Fig. 3. In the design of the plant illustrated, air is introduced ahead of the filter at the pump suction by a sniffler valve or by a compressed-air inlet just before the filter. The ferric hydroxide forms so rapidly that the filter removes it immediately.

For waters low in alkalinity and low in pH value, it is necessary to increase the pH value. For iron removal, the pH value must be increased to be-

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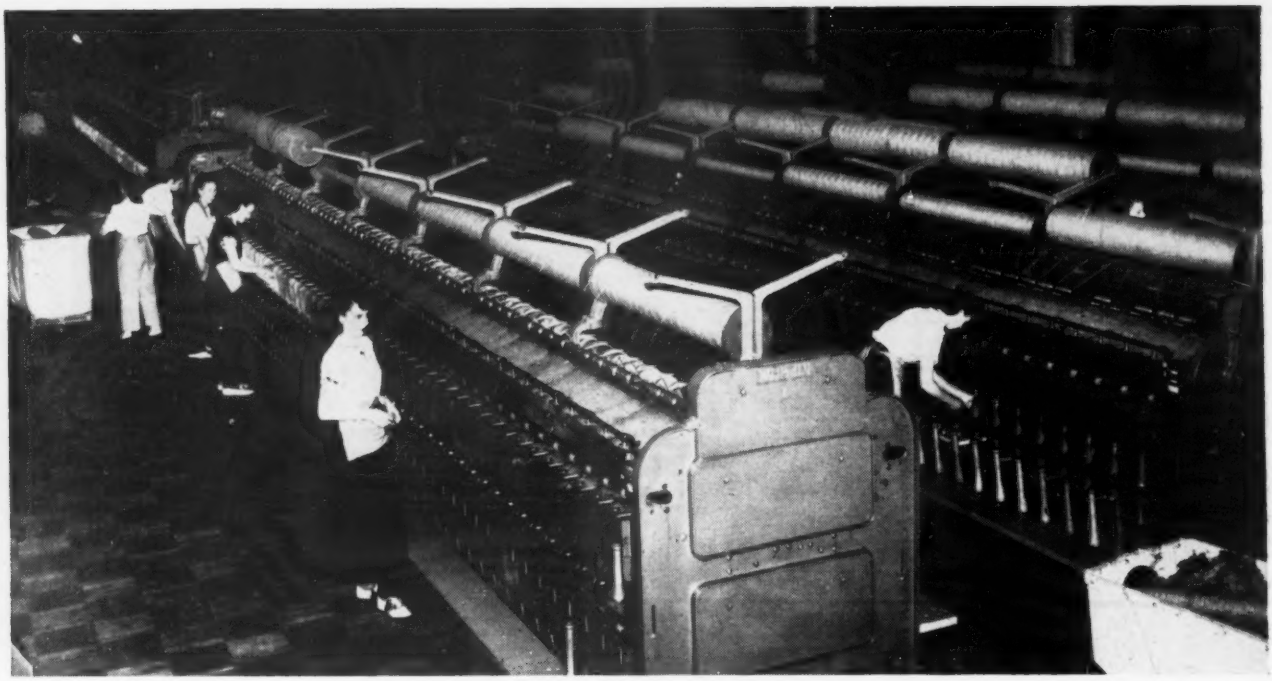

The Case for HUMIDIFYING Woolen Spinning and Weaving

HIGHLIGHTS: *Weights, running quality, static affected—Variations in patterns traceable to no control of moisture—Emulsions used are often quickly dried out—Changing pickage poor substitute for uniform yarn.*

By WILLIAM J. CROFTS

THE MANUFACTURER of woolens uses a wide variety of wools and takes great care in the preparation of the blends to retain fiber strength and quality in order to attain the ultimate in uniformity. Although great care is taken in selection and preparation of stock, not enough attention is given to atmospheric conditions within the building in spite of the well-known fact that the clean scoured wool fiber is very sensitive to sudden temperature changes, will absorb more moisture in a moist atmosphere than other textile fibers, and will lose its excess water content rapidly when stored in or exposed to heated dry air. It is well known that yarn strength improves with increased moisture content. In yarn manufacturing, moisture aids condensing of ropings, increases the binding effect of fiber, and sets the twist in the yarn. In addition, static electricity throughout the manufacturing process can be lessened by increasing the moisture content of the fiber.

A mill building without artificial humidity of any sort, heated with dry heat, is a huge dryer in the winter months; enough fresh air leaks in to form a circulation that augments the drying-out process. With the building closed tightly during the cold months, the super-dry air laps up moisture from stocks, belts, card tapes, yarns, and fabrics in storage (and even from the foundation of the card clothing). Warps in the looms dry out and contract over the week-end shutdown. Under extreme conditions, this drying will make start marks in the cloth and will cause more yarn breakage for a few hours at the start of the work week.

During warm weather, the process is reversed. Heat is shut off, and windows and doors are opened permitting the moisture-laden outside air to penetrate every part of the building. The outside atmospheric conditions are continually changing. Hot dry spells of weather are often followed by high humidity.

Wood is affected greatly by humidity changes, metal shrinks or expands with changes in temperature, and the shrinking and expanding of metal card cylinders and rolls stretches and loosens the foundation of the clothing to the extent of causing creeping and blistering. Ropes and spindle bands on the mules as well as tapes and small ropes on spinning frames tighten or draw up or relax during changes in weather. Leather belting and card rub aprons do likewise. The metal face of pulleys and leather belting contacting pulleys lose traction when cool and dry, causing belt slippage.

WEATHER BLAMED. Every woolen-mill worker is familiar with the expression, "The work is running bad today, it must be the weather." There is truth in this theory, for the weather does affect machine operations, yarn breakage, and most certainly the yarn tests.

A southern woolen mill during a prolonged hot, humid spell of weather was unable to maintain the standard

(*Continued on page 186*)

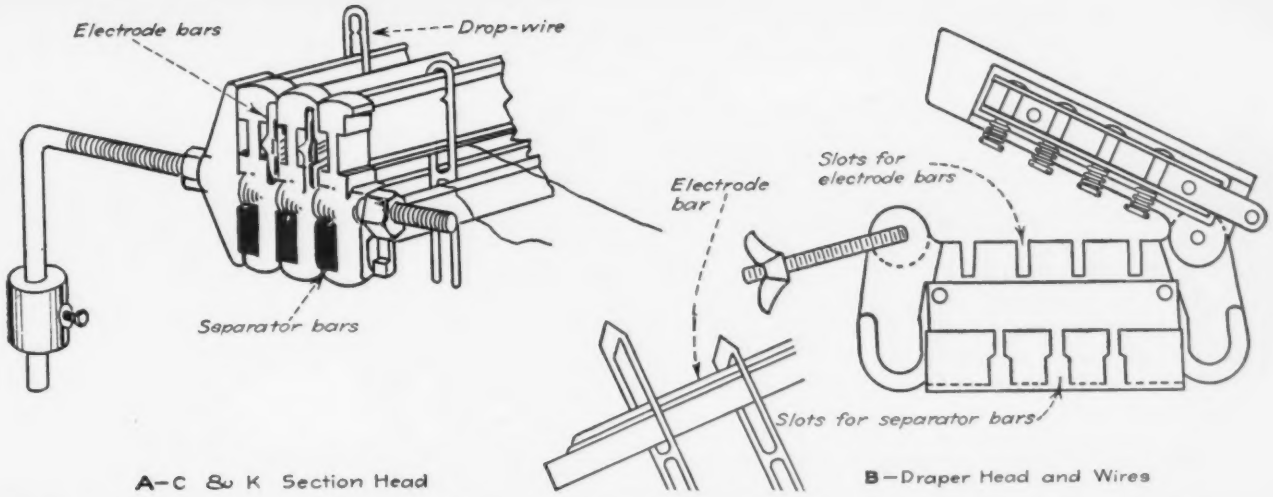

Fig. 1. *Drawing A shows the arrangement of C&K drop-wires, electrode and separator bars, and section head. Drawing B shows similar features of the Draper motion.*

Each WARP STOP MOTION Has Some Point of Superiority

HIGHLIGHTS: *Recent improvements in mechanical motions have overcome some of their original deficiencies—Electrical motion timing cam can be set to stop loom with lay in best position—Fixer should check functioning of each electrode bar before starting up loom.*

By H. E. WENRICH

WARP STOP MOTIONS are nothing new in the weave shed—but occasionally there are improvements that make the old motion or some of its parts obsolete. Lately, for example, a serrated sliding bar by Draper Corp. has improved the service of the mechanical sliding-bar warp stop motion. The serrated teeth push collections of lint to one end and out where they may fall on the floor and be cleaned away during regular sweeping periods.

Formerly, lint was a serious problem; it still is where the old-type bars remain in use. When lint clogs the bars and prevents dropwires functioning properly, many yards of cloth may contain missing warp ends. When several ends in adjoining reed-dent spaces break, and the warp stop motion fails to work, a long open streak will result. The cost of installing the serrated bars is a means toward minimizing imperfections and is therefore a necessary part of a cost-reducing plan.

Another mechanical warp stop motion, the Crompton & Knowles Regan motion, had few faults in the collection of lint, since its oscillator bars give a choppy up-and-down movement to the drop-wires and usually cut lint and loose filaments free. These bars have two parallel flat surfaces on otherwise round bars which are connected at one end to the link of a connector crank. When a drop-wire falls, the upper and narrower portion of the slot slides down closely over the flat surfaces and prevents the rod from turning. The locked rod in turn prevents the cranks from turning, checks the rocking lever, and stops the loom. As the bars are oscillating constantly, wear may develop to the point that when a wire drops the bars will continue moving and allow the loom to continue weaving. Another limitation to the Regan motion is high speed. On some modern looms the oscillating bars would turn entirely too fast to allow the wires to drop into position. To meet this problem, slots could be made with more clearance, but this re-design may allow the wires to twist after dropping and fail in their function.

ELECTRIC IS SPEEDY. High-speed looms require positive action. The use of a fixed bar for the wire to fall on when a warp end breaks seems an aid toward reliability. Fast, more accurate, nearly instant action is to be found in electric warp stop motions.

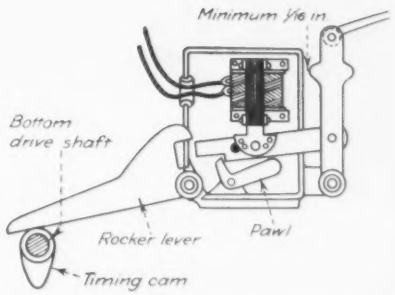

Fig. 2. *Knock-off motion on C&K system can be readily set to stop the loom at any position of the lay.*

The Rhode Island electric warp stop motion that is now put out by Draper Corp. and the Crompton & Knowles electric warp stop motion are important examples of the electric type.

In Fig. 1 are shown the principles used in the design of both of these motions. The Crompton & Knowles wire design has near its top two equal projections, one on each side, which contact the two sections of the drop-wire electrode bar when the wire drops and complete an electric circuit which stops the loom. Draper's drop-wire has an off-set angle at its top that brings

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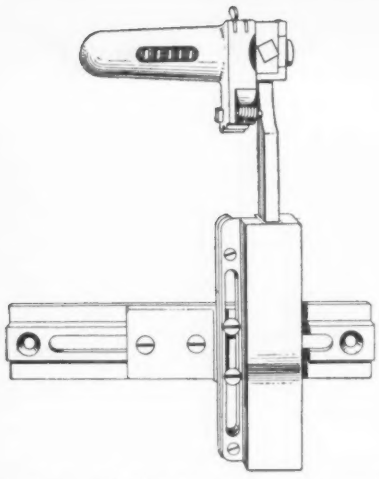
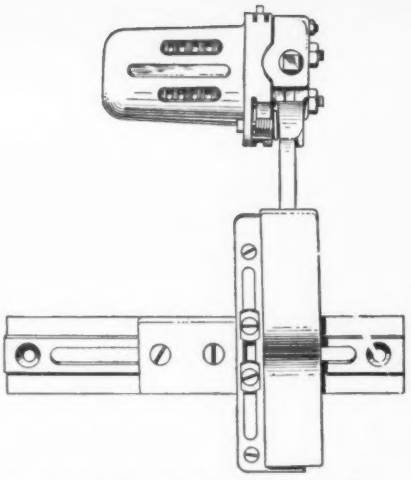
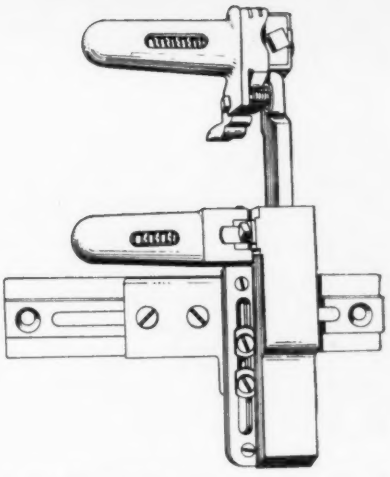


***A single-roll temple** gives good results when used with a fabric having little filling contraction or warp tension.*

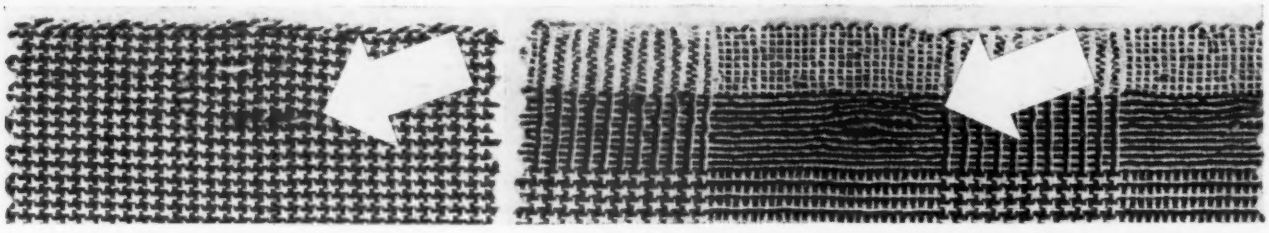


***A double-roll, single-cap** temple will give good results with almost all tightly woven constructions.*



***A double temple** will solve particularly difficult problems involving such fabrics as the 18-oz. government serge.*

CORRECT TEMPLES Will...



...Avoid Selvage Defects

***HIGHLIGHTS:** Danger of pin-cutting of worsteds arises when warp or filling strength is inadequate—Proper type temple should be applied—Light or heavy fabrics give more trouble than those of medium weight.*

By EUGENE P. SCHREMP
Consulting Editor, TEXTILE WORLD

TEMPLE CUTTING is a serious weaving imperfection which is sometimes difficult to overcome. This is especially true when weaving fabrics which have a crowded warp-and-filling construction. The tighter the weave, the harder it is for the temple to hold the cloth out to its proper width.

Worsted gabardines, fine serges, and fabrics in which the cloth is over-picked must be given special attention.

Temple cutting may be caused by use of an improper-type temple, by faulty adjustment, by mechanical failure, or by construction of the fabric.

If the breaking strength of the warp or filling is not adequate for the contraction of the fabric fillingwise or warpwise at each temple ring pin, then there is danger of the pin cutting the yarn. Most troubles are experienced in heavy, tightly woven fabrics or in light-weight goods. Medium-weight fabrics usually give less trouble.

Temple failure can cause a number of fabric imperfections, which if not eliminated may bring the mending cost to an alarming figure. These include cut filling or warp ends, temple marks, bad listings, and excessive warp breakage at the selvage. Rayon and other fine yarn used for decoration in warp or filling may also be cut by improperly operating temples.

Causes of filling cutting include broken or bent needle points and failure of temple rings to revolve for lack of lubrication or due to accumulation of waste. Over-picked, tightly woven fabrics particularly should be watched for filling cutting. In some cases, this trouble can be eliminated only by changing the construction to less picks per inch.

Warp ends cut by the temple are usually found in weaving light-weight fabrics with a high rate of filling contraction. Temple marks are caused by the action of the rings in distorting the warp or filling to a point where it will not go back to its proper interlacing. This may remain unnoticed until the fabric has gone through the finishing operations. The appearance is similar to a reed mark.

SELECT PROPER TEMPLE. There are a number of different kinds of loom temples. Cotton and rayon looms are usually equipped with reciprocating temples having single or double pin rolls. This type of temple is pushed back by the lay as it strikes the heel at each forward movement of the lay. Woolen and worsted looms use a ring temple. The rings are made of brass with pin points of different lengths and density. Temples are made with any number of rings, but the most common has seven to nine. The tem-

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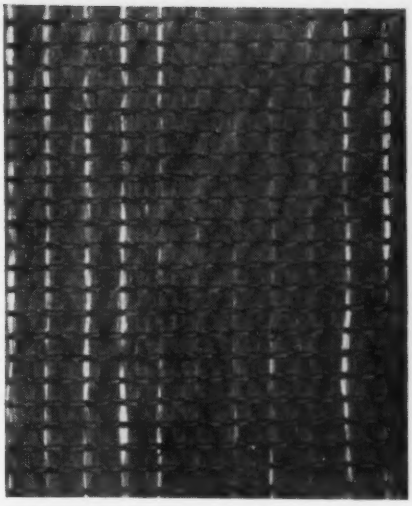
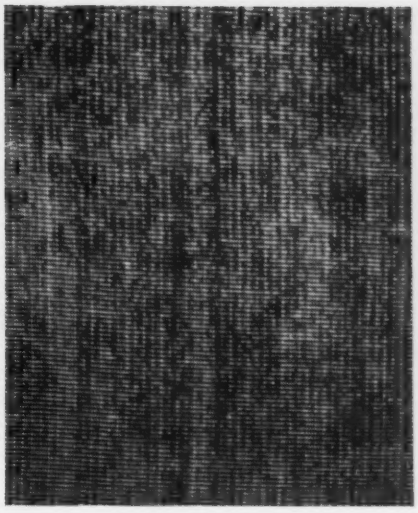
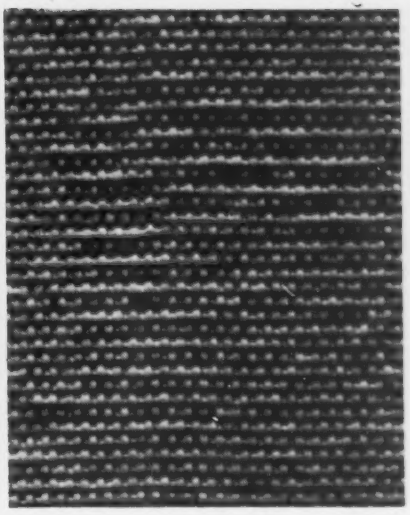


***Striped effect** warpwise in this fabric was caused by the flattened ends shown in the center.*



***Uneven spacing** of warp ends caused by excessive size content produced reediness in this fabric.*



***Canage (or teariness)** was made by ridges in the fabric which were caused in turn by excessive size.*

RAYON FABRIC DEFECTS— A Few Case Histories

***HIGHLIGHTS:** Slight variations in tension in manufacturing may cause major defect in finishing—Minor defects may have cumulative effect—Analysis calls for use of many techniques.*

By T. GRINDLEY
Technical Field Agent, Courtaulds (Canada) Ltd.

Presented at the First Canadian Textile Seminar

The First Canadian Textile Seminar was the initial joint meeting of divisions of The Textile Technical Federation of Canada. The federation's four divisions are the Eastern and Western Divisions of The Textile Society of Canada, and the Ontario and Quebec sections of the Canadian Association of Textile Colorists & Chemists. The seminar, consisting of a 3-day session at which technical papers were presented, was held at Queens University, Kingston, Ontario. Papers fell into three main divisions: Fiber; Preparatory Process and Fabrication of Cloth; and Dyeing, Printing, Finishing, and Related Processes. They covered cotton, wool and man-made fibers.

EXPERIENCE HAS TAUGHT that every process in the manufacture of a fabric is important to the end-product appearance and perfection. Slight variations in tension, for example, at one point in the process may appear in the finished goods as a major defect. Slight differences, not in themselves important enough to cause trouble, accumulate over a long length of yarn to cause changes in the structure of the fabric, giving a totally different appearance to the finished goods. The following case histories bear out these principles and may be useful in tracing the source of similar defects.

CASE HISTORY 1: In the last few years we have had a number of fabrics showing warp stripes. In one fabric, the stripes appeared as uneven spacing of the ends. The fabric, when viewed by reflected light, showed the stripes appearing whiter than the rest of the goods. When viewed by transmitted light, i.e. looking through the fabric against the light; these stripes appeared denser, and there was very little light showing between the warp ends. There was no difference in the denier or the amount of size on the warp ends. Careful measurements were made by placing a swatch of the fabric on a projector and projecting the image, enlarged 14 or 15 times, onto a screen. Measurements showed the warp ends to be evenly spaced, but close examination of the enlarged image showed the ends which were stripey to have greater spread or flatness.

It was thought that this defect was due to ridged rollers on the slasher. However, when dyed, this stripiness disappeared so that a level dyeing fabric was obtained.

CASE HISTORY 2: A fabric was received which contained light warp stripes. The problem was analyzed by removing defective ends from the cloth and matching these ends against normal ends on a shade card. The light ends still appeared light, and strength tests were made. The light yarn was quite weak; and in observation of the break, it was noticed that the yarn tore apart along its length instead of breaking with the usual snap. The defective end was next examined under the microscope, and

(Continued on page 228)

THROWSTER SAVES . . . KNITTERS HOLD QUALITY

Sunoco Fibrlub L-220 Lubricates Nylon Thread Better, Protects the Size, Reduces Breakage

One of the country's leading nylon throwsters, always interested in improving the quality of his output, ran comparative laboratory and plant tests on various coning oils. Of all these products, the best results were obtained from Sunoco Fibrlub L-220.

It eliminated preferential pick-up. It lubricated the thread better, protecting the size and reducing breakage. Along with economies in production it brought substantial savings in the cost of processing oil. Four out of five of the knitters to whom sample cones were sent for testing could not tell those processed with Fibrlub apart from those treated with vegetable coning oils, which are more costly.

The result of all this was adoption of Fibrlub as the standard coning oil; and the plant has been using it exclusively for two years.

Fibrlub L-220 is used neat in the trough of cone winders. It is applied to protect the size already added. It will not become rancid, and retains its pleasant odor. All the ingredients being compatible, no change in viscosity or composition takes place—there is no undesirable variation in the amount of oil picked up. For complete information about this economical, "Job Proved" nylon coning oil, call or write the nearest Sun Office.

SUN OIL COMPANY • *Philadelphia 3, Pa.*

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SUN PETROLEUM PRODUCTS

"JOB PROVED" IN EVERY INDUSTRY

SUNOCO

Size collections on preboarding forms can cause snagged nylons.

Fast Colors, Snagging Are HOSIERY PROBLEMS

HIGHLIGHTS: *Looping and seaming cause most snags of nylons—Proper sizing and oiling can reduce defects—Fast colors needed for cotton hosiery, AATCC told—Naphthol and vat color troubles can be overcome.*

HOSIERY FINISHING PROBLEMS were aired at the annual meeting of the American Association of Textile Chemists & Colorists in Augusta, Ga., as the following abstracts of two papers presented will show.

The Treatment and Handling of Nylon Hosiery to Reduce Snagging During Manufacture

By ALFRED J. OLSON,
Phoenix Hosiery Co.

Snagging of nylon hosiery occurs in every operation, but the operations in which more snags occur than in any others are looping and seaming. In preboarding, the second highest number occur.

Several steps can be taken to reduce snagging in all operations. Some of them are:

1. Treat the yarn with the proper amount of size (3.8% for 20-, 30- and 40-den.) and coning oil (about 4.0%) to protect the yarn.
2. Handle the hose as little as possible.
3. Have operators use hand lotions frequently.
4. Keep preboarding and boarding forms in first-class condition.
5. Use a good dye net and proper finishes.
6. Provide adequate supervision.

The aim in sizing nylon yarn should be to put on as much size as possible to protect the yarn without sacrificing knitting qualities. There must, of course, be a minimum of flaking-off of the size. Air conditioning in the sizing, coning, and knitting rooms will eliminate much sizing trouble.

Experiments are under way on sizing compounds that will eliminate the necessity for air conditioning; but so far, such compounds have not been perfected.

One step taken to reduce snags is to have rayon plants insert 10 tpi. of twist in nylon yarn. The twist is then set and the yarn sized. Hosiery knitted from this yarn is quite elastic and does not snag so badly. However, the cost of the twisting and sizing operation is about $4.50 per lb.

In looping and seaming, the condition of the operator's hands determines to a large extent the snagging that is done. The operator should lubricate her hands every 15 or 20 min. with glycerine, lotion, or cream; and it is a good idea to have a manicurist on hand at all times.

No rings or other jewelry should be worn by the operator. Chairs, tables, etc. that the hose comes into contact with should be covered with a smooth nylon fabric.

PREBOARDING SNAGS. Preboarding forms often cause inside snags, chiefly by built-up size deposits. It is necessary to wash off these deposits at regular intervals and check the forms for rough spots.

An excellent practice is to lay stockings out flat when they are taken off the forms. The foot of the hose takes up more sizing than does the leg. If the foot is double over the leg and the size dries, the hose is apt to snag when it is straightened out. Usually, the hose has 1 to 2 hr. drying time before the girl with the collection trays comes around and takes it up. Although laying the hose out straight may cut production somewhat, the decreased snagging more than pays for the production loss.

A fine double-mesh cotton bag is probably better for dyeing hosiery than the widely used muslin bag. It is important to scour and strip the bag after each dyeing cycle. If the bag is cleaned and left brittle or harsh, snagging of the hosiery will occur during the next dyeing cycle.

Any good scouring agent will do a satisfactory cleaning job on the bag. A cheap-grade laundry soap is all right.

In the last scouring bath, a softener should be used. Almost any good softener is satisfactory. Better conditioning of the bag is obtained if the bag is tumbled or otherwise kept in motion while it dries. The mechanical action of tumbling will prevent harshness and help to make the bag soft and pliable.

It is important that the scouring of the bag be done as soon as it is emptied in the boarding room. The wet size can be washed out easily; but if it is allowed to dry, washing out all the small lumps of hard size is difficult. These lumps will cause snagging when the bag is used again.

Regular inspection of the dye machine for rough places should be made. Good penetration and levelness of dyeing can be obtained at a machine speed of 4 to 6 rpm., and at this speed there is less chance of damaging the hose than there is at higher speeds. If samples are taken from the bag during the dyeing process, the sampler should wear rubber gloves to handle the hose.

A hair brush is likely to snag the hosiery when the welts are brushed down, particularly if the bristles of the brush split. A better tool for brushing out the welts is a ¼-in. felt pad folder over a ½-in. dowel.

The Application of Fast Colors on Cotton Hosiery

By C. HARRELL ASBURY,
E. I. du Pont de Nemours & Co., Inc.

There is no reason why cotton hosiery cannot be dyed with fast colors. Naphthol

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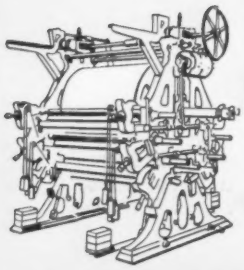
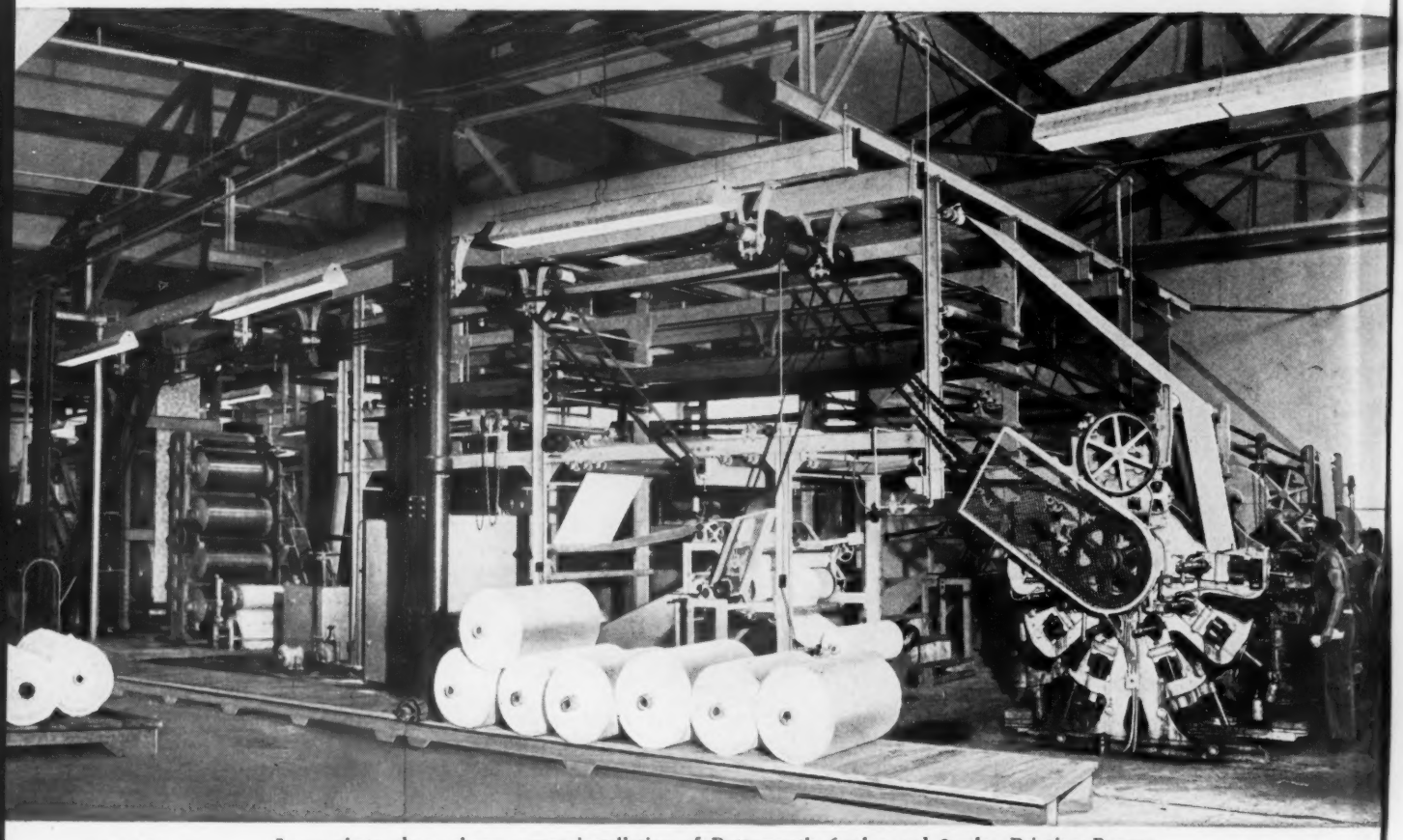
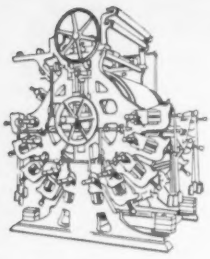
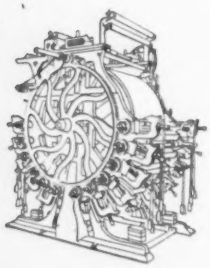


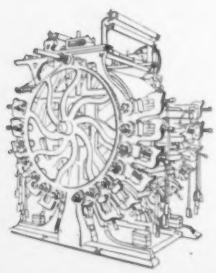
Close Control of Printing with Latest Butterworth Machines



Large photo above shows recent installation of Butterworth 6-color and 8-color Printing Ranges. Illustrated at top and left of page are vignettes of Butterworth 6-color, 8-color, 12-color and 14-color Printing Machines.







The new 6 and 8-color Butterworth Printing Machines permit close control of printing performance for cotton, rayon and silk fabrics at high speeds. Six and eight color shades in multiple patterns and small figure designs are registered accurately by means of precision-machined nips. A heavy, balanced rubber covered printing cylinder combined with pneumatic pressure gives greater control and more uniform printing results. Roller bearings insure smooth, high-speed operation. Machines are compact and of modern design. Side frames are ruggedly constructed for heavy duty.

With the Butterworth 6 and 8-color Printing Machines fabrics are printed in record time, ready for conversion into dresses, blouses, drapes and scarves. Butterworth Printing Machines available from 1-color to 14-colors. Call or write today for complete details.

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Formulas and Fiber Properties Help FABRIC DEVELOPERS

HIGHLIGHTS: *Weaknesses of one fiber can be overcome by careful use of another—Ratio of non-usable cotton fiber can be reduced by blending —Use of rayon staple can produce simulated worsted yarn on woolen system—Knowledge of proper use of stress-strain curves is important — Empirical formulas can speed development.*

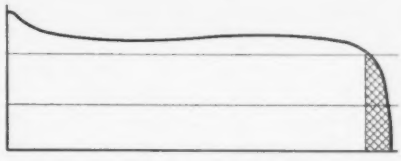
By ROY WOOD
Market Development Div.
Courtaulds (Canada) Ltd.

Blend Benefit Required	BLEND METHOD Dilute with—
Strength when you are obliged to use— (a) Coarse fiber of varying staple (b) Coarse fiber of short staple (c) Fine and weak fibers	(a) Finer fibers of uniform staple (b) Longer fibers of fine staple (c) Strong fibers of fine staple
Volume or loft	Short and coarse fibers and those of low specific gravity and high crimp
Leanness or a "worsted" character	Long and fine fibers
Wear resistance	Coarse fibers
Rigidity	Coarse fibers
High luster	Long and coarse fibers
Low luster	Short and fine fibers
Drape or "bendability"	Long and fine fibers
Water resistance	Coarse and long fibers
Resiliency	Short and mixed coarse and fine fibers
Shrinkage resistance	Short and coarse fibers of random dispersion and low twist
"Anti-pill" raised cloths	Mixed coarse and fine of medium length

WHAT BENEFITS CAN ACCRUE from the blending of fibers in fabric development? While the surface has hardly been scratched, the designer can use certain basic rules in engineering fabrics. He will measure the fiber characteristics, sift out inherent weaknesses, and try to find another fiber strong in just those very weak points, in order that by blending the two fibers, the original disadvantages may be overcome without marring the advantages. A few illustrations will show what blending of fibers can accomplish on various spinning systems.

One of cotton's weaknesses is the irregularity of staple length. Shown below is the staple diagram for a sample of 1 $\frac{3}{32}$-in. strict middling cotton.

The shaded, undesirable portion of staple would either be rejected as waste, or be included in the finished yarn, causing irregular spinning, weak places, and a generally poorer product. If, however, higher-grade cotton, or a synthetic fiber of suitable dimension, such as 1$\frac{1}{2}$-den. 1$\frac{1}{4}$-in. staple as illustrated in the following, was mixed in a 50/50 blend with the same cotton, the ratio of non-useful fiber would be reduced, as shown in the composite diagram in next column. Thus, by blending, a more suitable stock for spinning has been obtained; and therefore, for certain uses a more suitable yarn will be produced.



One of today's problems is the production of merino qualities with an inadequate wool supply. It is true that crossbreds never give the same effect, but at least the effect can be approached if sufficient fineness of yarn and texture can be achieved. A simple method is to dilute the available crossbreds with "qualities" of synthetics even finer than the quality of merino which would normally be used. A strong, weavable yarn will result in which the harshness of the crossbred is mollified by the softness of the synthetic.

Every woolen man has endeavored to simulate a coarse worsted-spun yarn on woolen machinery. His aim is to produce a finer yarn of greater strength and sheerness than is customary on his equipment.

Fundamental weaknesses of woolen spun yarns are unevenness and weak spots. These are caused by haphazard distribution of fibers and are exaggerated by the use of wool having an irregular length of staple.

By blending in a small mixture of staple having a fiber length in excess of the staple length of the wool (the precise length for each condition may only be found by trial and error), the longer staple will tend to take the strain during drafting and will spin to the core of the yarn. Thus there will, in effect, be a strengthener at the core, while the short fiber will tend to be thrown to the surface by centrifugal force.

Today, one must introduce into yarns, and even into fibers, those qualities which will give to the finished goods the properties most desirable for a given end use. It is essential that the designer have a thorough knowledge of:

1. Fiber properties.
2. Ability to interpret the properties into specific mechanical performances of yarns and fabrics.

When designing a mechanically superior texture, certain data is vital. Information which must be possessed, is:

1. The geometric form of the fibers available, i.e., fiber diameters; average staple length, and variation in length.
2. The stress-strain characteristics of the fibers to be employed.

Following is such a chart showing the properties for various yarns, one of which has been isolated on a second chart in order to show how easily one can read from it certain data which will be essential to the designer of the future.

Every section denotes some yarn

(*Continued on page 198*)

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Fringe Issue Costs to Rhode Island Textile Industry

(Cents per hour)

	Vacations	Paid Holidays	Insurance	Overtime	Shift Differentials	Totals
Finishing Plants	3.55¢	2.56¢	3.32¢	6.22¢	1.05¢	16.70¢
Woolen-Worsted Weaving	4.44¢	3.22¢	2.03¢	5.41¢	1.64¢	16.74¢
Woolen-Worsted Spinners and Processors	3.64¢	2.29¢	2.32¢	7.29¢	1.97¢	17.51¢
Cotton-Rayon Spinners and Weavers	3.02¢	2.16¢	1.17¢	6.09¢	0.66¢	13.10¢
Cotton-Rayon Spinners and Processors	3.71¢	1.93¢	2.79¢	4.54¢	1.59¢	14.56¢
Narrow Fabrics and Braids	2.87¢	1.28¢	1.30¢	4.26¢	1.40¢	11.11¢
Levers Lace	3.86¢	2.90¢	2.00¢	1.98¢	0.00¢	10.74¢
Weighted Averages	3.53¢	2.36¢	2.06¢	5.50¢	1.19¢	14.64¢

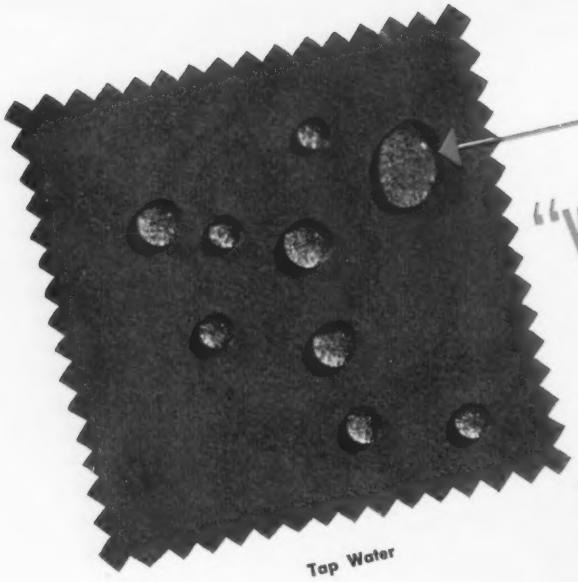
Rhode Island Mills Price "FRINGE ISSUES"

HIGHLIGHTS: *Survey by R. I. Textile Association finds cost per hour of "fringe" demands—Average cost per hour per worker is 14.64¢—Fringe-issue costs exceed 11% of total textile payroll of state.*

By D. I. ROGERS

THE COST of "fringe" issues can be a strong point in collective bargaining. The cost, presented as "cents per hour," can also be a strong tool in making employees conscious of company benefits. The figures for Rhode Island mills have just been determined in a recent study by the Rhode Island Textile Association.

Paid vacations, holidays, insurance, overtime, and shift differentials are putting an average of 0.1464 cents per hour in the pay envelope of every textile worker in Rhode Island. That's the conclusion of the association's recent study covering 61 mills employing 26,166 workers—about half of the textile workers in the state. Sums were figured on a work year of 2,000 hr. The total cost of fringe issues yearly is over 11% of the total mill payroll for the state.



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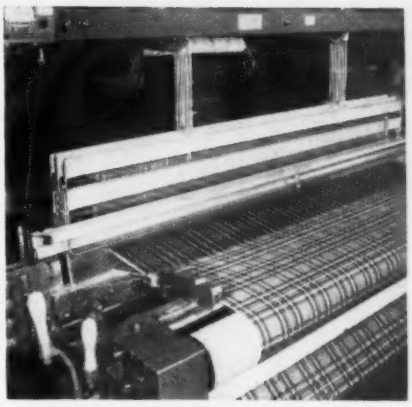
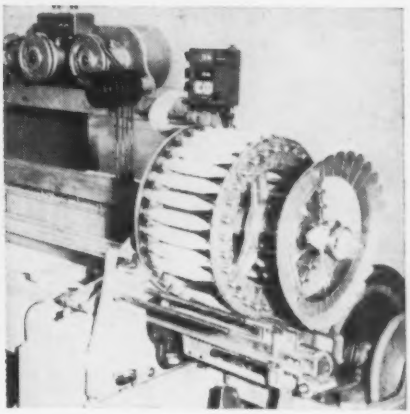
HIGHLIGHTS: *Reciprocating parts benefited by light metal — Picker sticks and covered shuttles being tried—Carpet looms have reduced weight of parts — Trend to large all-metal beams for both looms and warp-knitting machines — Full-fashioned and circular machines utilize aluminum to replace cast iron.*

By H. V. MENKING
Industrial Machinery Div., Reynolds Metals Co.



***New Kellogg loom** incorporates aluminum castings for magazine parts and pulleys; sheet aluminum for doors and covers; aluminum extrusions for lay beams, hand rails, bobbin deflectors, clamp holders for drop-wire bars; aluminum yarn beams.*

Courtesy M. W. Kellogg Co.



***Hand rails** and reed caps of extruded aluminum have successfully passed two years of rigorous testing in C & K looms. Replacing steel-reinforced wood rails, the aluminum rails weigh only half as much and do not distort.*

Courtesy Crompton & Knowles Loom Works.

THE HIGH SPEEDS and sudden reversals of moving parts of looms makes feasible reduction of inertia forces through extensive use of materials of light weight and high strength. Such materials as heat-treated aluminum have high strength-weight ratios; and because they are strong and tough, they resist fatigue failure. Their rigidity keeps elastic deformation of moving members at a minimum. Their permanent dimensional stability insures smooth, vibrationless operation and low maintenance cost; and finally, aluminum cannot rust—an important factor for applications in the high humidity of textile mills.

General recognition of these characteristics has recently led to important new developments in loom design. Cast iron, steel, and wood parts are being replaced by aluminum extrusions, tubing, forgings, sheet, and castings. Examples are lay beams, reed caps or hand rails, heddle or harness frames, shuttle boxes, cloth rolls, hand wheels, pulleys, lever arms, and cam castings.

Wooden lay beams, often stiffened with steel angles or plates, have now given way to extruded aluminum lay beams, shaped to produce maximum strength and stiffness in the principal directions of stress. The use of extruded shapes makes it possible to provide cross-sections suitable for joints with other lay parts, and permits the numerous cutouts required by the lay functions without adverse effect on the strength and dimensional stability of the aluminum beam.

Made of 14S-T6 alloy, the aluminum lay beam permits a considerable weight reduction compared to steel-reinforced wood lays and eliminates the difficulties from splintering, cracking, and distortion that have long been associated with standard lay beams.

Similar benefits have accrued from the adoption of extruded aluminum hand rails or reed caps. Such aluminum members have been found to vibrate considerably less than standard steel-reinforced wooden hand rails. The weight of an aluminum hand rail of 92-in. length in a Crompton & Knowles worsted loom is 17 lb., which is the same as that of a wood rail, while a steel-reinforced wood rail of the same length weighs 34 lb.

Aluminum heddle and harness frames, being free from distortion, promise to overcome the principal objection to standard wooden frames. In trial installations equipped with aluminum heddle frames, loom efficiency has been increased from 80 to 90%.

MILL TRIALS. Aluminum whip rolls, now under consideration, offer the advantages of light weight, good balance, and freedom from rust compared with steel rolls of standard designs. Aluminum take-up rolls offer ease of handling as the principal advantage over steel and wood rolls.

Aluminum picker sticks, designed to develop the same resiliency as hickory sticks but with greater strength, have been in experimental use in certain types of looms with good results. Made from 14S-T6 or similar alloys in extruded, rolled, or forged form, the aluminum sticks are nearly as light as hickory sticks but last many times longer because they are free from splintering and cracking. Parts of loop-type pickers are also made of aluminum with good results.

The desire to increase the service life of shuttles, as well as the shortage of seasoned dogwood and other grades of wood suitable for use in shuttles, have prompted development work on aluminum shuttles, which is now in progress. Experience gained with experimental light-metal shuttles so far indicates the need for covering the aluminum surface with a non-metallic material, such as laminated phenolic resin sheet of about ⅛-in. thickness. Direct contact of the aluminum surface with reed, warp, and binder would generate frictional heat in the aluminum shuttle, which is undesirable for various reasons.

Aluminum castings and sheet are used for shuttle boxes. Hand wheels, magazine parts, pulleys, lever arms, and cam links are other examples of moving parts in which aluminum castings save energy by reducing inertia forces and thus permit smoother and faster loom operation. Drop-wire-bar holders are cut from extrusions.

Aluminum cloth rolls, replacing wood, are finding widespread use because of their lightness and freedom from splintering, cracking, and distortion. Such rolls are used with either a hexagonal or round cross-section, also

This is the last of three articles showing how light metal is now being used in improving machinery and equipment and how many applications can be made by mills themselves—Editor.

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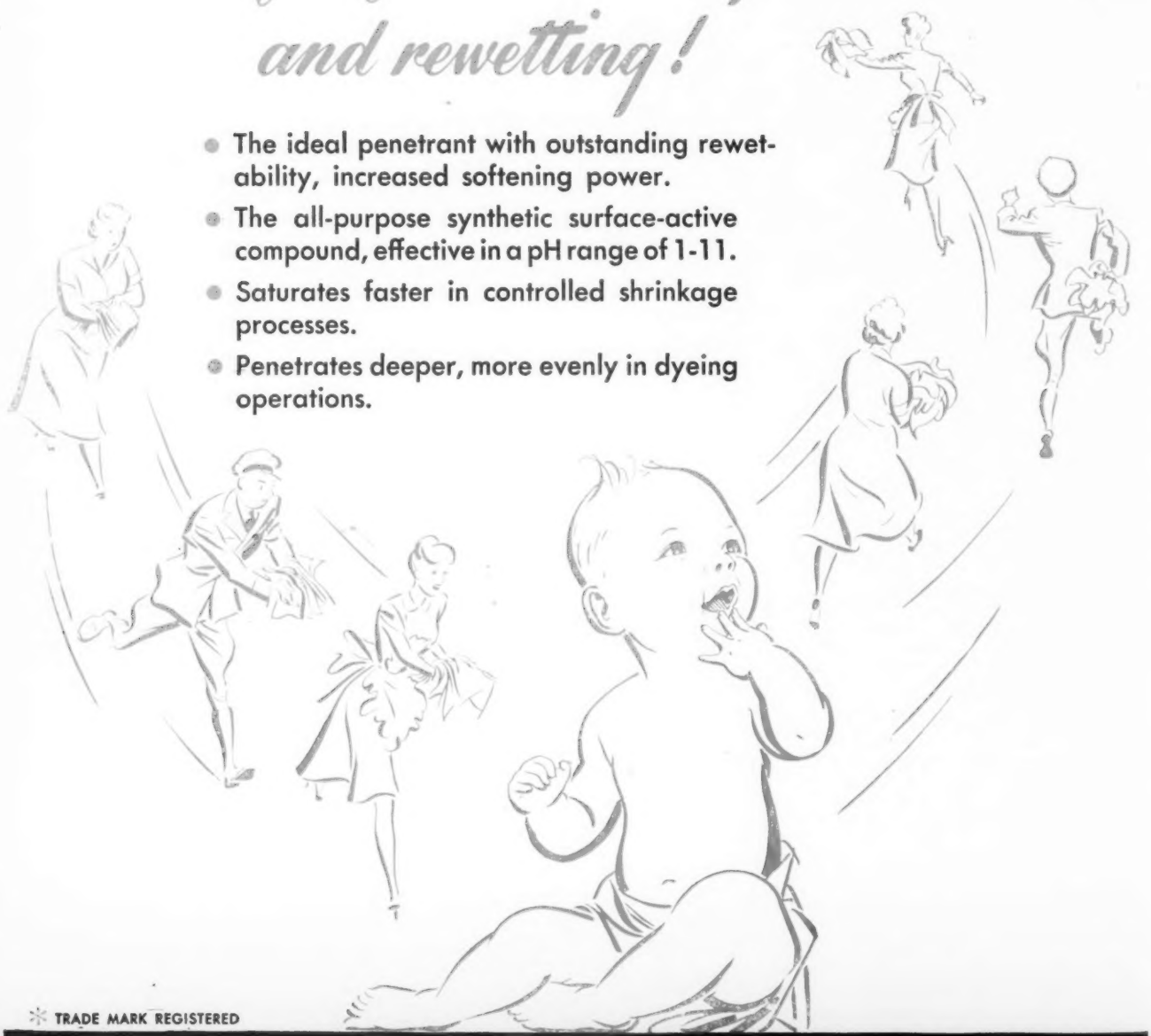

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with starting slot, and are generally made of 63S-T5 or 63S-T6 alloy.

A rough sandblast finish may be applied to the aluminum surface to improve its grip on the cloth. Such finish is not required on the slotted roll nor on the hexagonal roll; the latter has been developed to provide the necessary grip on the cloth without use of slot and wedge stick. Solid aluminum cloth rollers, anodized to provide a hard, smooth finish, and provided with steel gudgeons, are recommended to replace steel rods with cardboard tubes.

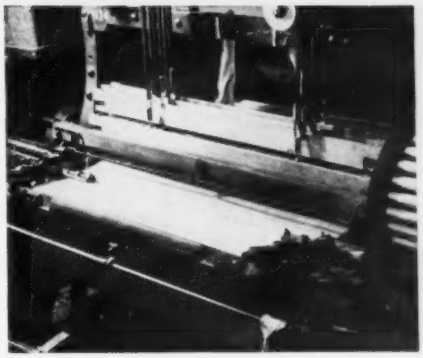
LARGE BEAMS. In loom beams, the trend to larger sizes and the growing use of strong and resilient synthetic fibers which develop high pressures in warping, led to the development of beams with cast-aluminum head flanges. This first step has now been followed by making the beams entirely of aluminum, replacing wood, cast iron, steel, and composite types of beams. This development includes beams both of fixed and adjustable length. Cast-iron let-off gears, steel-flange rims, and steel gudgeons are the only non-aluminum parts on the latest types of beams, which are designed to withstand axial and radial loads of well over 100,000 lb. acting on flanges of 32-in. diameter and barrels of about 7-in. diameter.

Loom beams with splintered and worn-out wooden barrels can be reconditioned with the help of tubular aluminum barrels. These can either be slipped over the turned-down wood barrel or, preferably, can replace the wood barrel entirely. In this application, the cast iron or steel flanges, tie rods, and gudgeons or shafts of the beam are retained. Such aluminum barrels are available with or without a yarn-starting groove, and are also made of two extruded dovetailing halves.

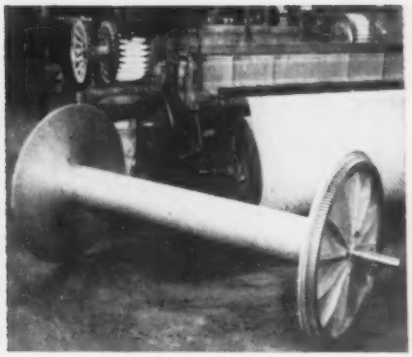
In narrow-fabric and wilton-carpet looms, aluminum lay beams, batten beams, and hand rails are used because of their lightness, strength, dimensional stability, and freedom from rust. Extruded aluminum shapes are recommended for tube frames in axminster carpet looms. Aluminum spools for tube frames in axminster looms help lighten the heavy load which the conveyor has to move with each pick.

Other recommended applications of aluminum in weaving equipment include edge-roll bobbins or selvage spools, center-name beams, lug straps, and sweep sticks.

KNITTING. In knitting machinery, the light weight and non-rusting qualities of aluminum have led to a wide range of applications.



***Harness frames** built of extruded aluminum sections are preferred to wood because they hold their shape. Experimental installations indicate greatly increased loom efficiency.*
Courtesy Emmons Loom Harness Co. and Ponemah Mills.



***Built experimentally** for a new Draper cotton-loom installation at Avondale Mills, Sylacauga, Ala., aluminum beams, such as the one pictured, are now being tested. Flange diameter is 32 in., barrel diameter 7½ in., length between flanges 59½ in. (Beam built by Hayes.)*

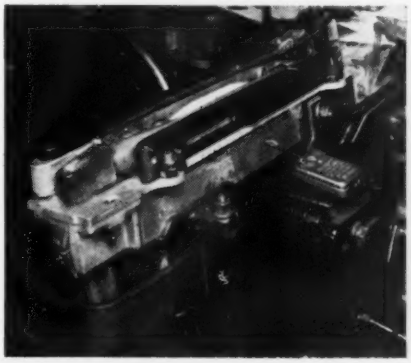
In warp or tricot knitting machines, aluminum bars machined from heat-treated extruded shapes are used for needle bars, sinker bars, clamps, presser bars, and guide bars. Both 63S and 3S aluminum tubing are used for cloth or takeup rolls and, with anodized finish, for tension tubes. Heat-treated aluminum castings have proved successful in lever arms, rocker arms, and other reciprocating parts in which lowest possible inertia is of particular importance.

Aluminum warp spools or tricot warp beams are used both in knitting machines and for shipment of yarn from rayon plant to knitting mill. Being light and well balanced, such aluminum spools run smoothly at highest warping speeds, are convenient to handle and economical in shipping. Elastic deflection of flanges is minimized by the head design. The machined faces of the flanges retain their smoothness and are unaffected by the corroding influence of humid knitting-mill atmospheres.

In full-fashioned hosiery machines, aluminum extrusions and castings find application in needle bars, welt bars, clamps, and lever arms. High resistance to the chemical attack from certain yarn oils is an important factor favoring aluminum in this field.

In circular-knitting machines, effective use has been made of the cost-saving features of aluminum extrusions and rolled shapes to replace cast-iron parts which were expensive to machine, and steel parts which required galvanizing or painting. Extrusions are employed for frame corner sections, while heat-treated aluminum castings find application in mounting plates. Doors made from strong aluminum sheet are easily opened and closed.

***Removable winder rolls** of aluminum replace steel rolls in C & K axminster carpet loom shown here in Karagheusian Mill.*
Courtesy A. & M. Karagheusian, Inc.



***Lay construction** has been improved by use of extruded aluminum shapes to eliminate trouble from splintering, cracking, and distortion. Lay ends incorporate aluminum castings. Photo at right shows extruded shape before and after machining.*
Courtesy Draper Corp.

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By LEO T. PARKER
Attorney-at-Law, Cincinnati, Ohio

A REVIEW OF higher-court decisions rendered recently involving textile manufacturers shows that knowledge of current decisions would have enabled many of these manufacturers who lost to have won or even to have avoided the suits. Lawyers want to win law suits even more than clients desire favorable verdicts. What chance, however, has a thoroughly competent lawyer to win a suit for a textile manufacturer who has little knowledge of modern law and therefore does not prepare to win unavoidable suits? Mill men who read the cause and outcome of the following outstanding cases involving other manufacturers will acquire legal knowledge to assist their legal counsel to win future suits.

WALKWAY LIABILITY. Considerable discussion has arisen from time to time over the legal question: Is an employer liable for injuries to employees on a public street which the employer constructed and maintained?

For instance, in Lamb v. Pacolet Mfg. Co., 43 S. E. (2d) 353, reported August, 1947, the testimony showed that the Pacolet Mfg. Co. had built and maintained on its property concrete steps and walkways for the convenience of getting its employees from the mill village to the mill itself.

One morning the street and steps were heavily coated with sleet and ice, and an employee slipped and fell while descending the steps.

The higher court refused to award compensation under the State Workmen's Compensation Act saying that when others besides employees use steps, or other passageways, the same became a "public" thoroughfare. Hence, the municipality, in which the passageways are situated, becomes responsible for maintenance and repairs.

Also, in Gallman v. Springs Cotton Mills, 201 S. C. 257, the court refused to award compensation for injuries received by an employee who slipped on ice on a mill-village street which was owned by the employer but used primarily for the public.

For comparison, see Eargle v. South Carolina, 205 S. C. 423. In this case, the higher court held that an employee is within the scope of his employment when passing to and from the place where the work is to be done if the passageway is private and owned by his employer. This court said:

"If the employee be injured while passing to and from his work by a way over the employer's premises, the injury is one arising out of and in the course of the employment as much as though it had happened while the employee was engaged in his work at the place of its performance."

NO AUTHORITY. Recently a higher court laid down the law that acts of the president of a corporation not pertaining to his official duty, or not within the scope of his employment, are not binding on the corporation.

For illustration, in Yeskel v. Murray Holding Co., 54 Atl. (2d) 224, reported July, 1947, the Textile Prod-

ucts Corp. sued the Murray Holding Co., a corporation, to compel it to complete a a contract for the sale of realty. The testimony showed that the textile corporation offered in writing to purchase a building from the Murray Holding Co. for the sum of $125,000. The Murray Holding Co.'s directors accepted the offer and sent its president with a written contract to have it signed by the textile corporation. This contract contained among other things a clause to the effect that a mortgage would be taken from the textile corporation for $85,400 to assist financing the purchase price.

The contract also provided that: "The mortgagee (textile corporation) shall have the right to prepay any part or the balance of the purchase price after six (6) years from the date, namely June, 1946." The president changed this specified "six (6) years" to "three (3) years."

In view of this change made by the president, the higher court held the contract void, saying: "The president had no power to alter the provisions of a formal contract entered into by the corporation itself. The act of the president of a corporation, unless it is shown to pertain to his official duty, or to be within the scope of his employment, which was not shown in this case, cannot be regarded as the act of the corporation, and is not binding upon it."

AVAILABLE FOR WORK. Considerable discussion has arisen from time to time over the legal question: When may a discharged employee be denied compensation under the State Unemployment Compensation Law? According to a recent higher court, if a person refuses employment reasonably suited to him he cannot receive unemployment compensation from the state fund.

For illustration, in Wagner v. Unemployment Compensation Commission, 198 S. W. (2d) 342, the testimony showed facts, as follows: One Wagner was employed by the Pittsburgh Products Co. She was laid off because of lack of work and was told by the products company's foreman "they thought they were going to call the girls back . . ." Wagner applied for compensation under the State Unemployment Compensation Law. The commission, after learning that she had refused work at a shoe factory, failed to award compensation. She appealed to the court and testified that the reason she did not take employment at the shoe factory was that "my father and sisters were all working at the products factory, and I wanted to go there too; naturally, we all wanted to be together." The average hourly rate of pay at the shoe factory was just about the same as she made with the products company.

The higher court approved the commission's disallowance of compensation, saying: "She did not look for other employment; indeed, she refused offers of employment which were not shown to be unsuitable for her—she did not want 'that kind of a job'. . . . As she said, she intended to wait until she was recalled by products company. . . . It could not be said claimant (Wagner) was an involuntary victim of the evils of unemployment in the face of shown facts of available employment."

NOT ACCIDENTAL. According to a recent higher court, if an employee suffers an injury which aggravates an illness he cannot recover compensation under the State Workmen's Compensation Act.

For example, in Turek v. Damalak, 53 Atl. (2d) 748, reported October, 1947, it was shown that an employee was using a heavy sewing machine when the belt slipped off and it was necessary to pull the machine away from the wall in order to place the belt back on the treadle. The employee gave the machine a jerk to pull it out from the wall and, when he did so, sustained sharp pain in his back. Examination by a physician and an X-ray examination revealed "a very marked arthritic condition of his back" of long standing. There was other medical testimony that the disability suffered by the employee resulted entirely from an aggravation or "lighting up" of the existing arthritis.

The higher court refused to award compensation to the employee, saying: "This case discloses no more than proof of the aggravation of a pre-existing condition; that in itself is not enough, and does not give rise to the inference that its cause was accidental. There must be clear proof of an accident."

For comparison, see Guthrie v. Texas Employers' Insurance Association, 199 S. W. (2d) 685, reported July, 1947. Here an employee sued to recover compensation for total and permanent disability alleged to have been occasioned by an accident suffered by him while employed by Postex Cotton Mill. The evidence showed that the employee was working as a clean-up hand in the weave room of the Postex mills; that the room was heated by steam and, about 11 o'clock in the morning, he became too hot; that he became sick at his stomach, vomited, and went outside to cool off. The mill shut down at noon and the employee went home, where he continued to cough through the afternoon and night. He worked most of the time during the next month but was ill and confined to his bed several days during that month. He suspected he had tuberculosis, and after undergoing an examination he was admitted to the state sanatorium.

The higher court refused to award the employee any compensation, saying: "In order to recover under the compensation law, actual physical injury, internal or external, must be shown before an inference legally may be drawn that the final result in respect to which compensation is claimed is attributable to an injury originating in the employment."

WHAT IS AN ACCIDENT? According to a late higher court decision, an employee who is injured in a fight may recover compensation under the State Workmen's Compensation Act, for an "accident."

For example, in Lanford V. Clinton Cotton Mills, 30 S. E. (2d) 36, it was shown that an employee named Lanford, while employed by Clinton Cotton Mills, had a fight with another employee named Heaton. Heaton bit off a portion of one of Lanford's ears.

Lanford filed a claim with the Industrial Commission, under the Workmen's Compensation Act, for serious head and facial disfigurement.

In allowing Lanford $2,000 compensation, the higher court said: "While a willful assault may be said not to be an accident so far as the aggressor is concerned, to him who is not the aggressor, there exists the unexpected factor necessary to constitute an accident as contemplated by workmen's compensation laws."

For comparison, see Shehane v. Springs Cotton Mills, 34 S. E. (2d) 180. The facts of this case are that an employee in Springs Cotton Mills had been in its employment for about 8 years as a weaver. While passing between two looms, he stepped on a piece of slick paper. His foot slipped and caught between lay and shipper lock whereby he was struck on the left testicle, injuring same.

The higher court awarded compensation, saying: "A study of the complete record in connection with the above shows that claimant worked for this employer satisfactorily for 8 years prior to receiving this injury which arose out of and in the course of his employment."

And again in Jones v. Anderson Cotton Mills, 31 S. E. (2d) 447, it was shown that a breakdown of a past hernia operation for an old injury sustained in the mill began only a few days after an employee return to work. His condition continued to grow steadily worse until he was forced to quit work. The Industrial Commission granted an award of compensation.

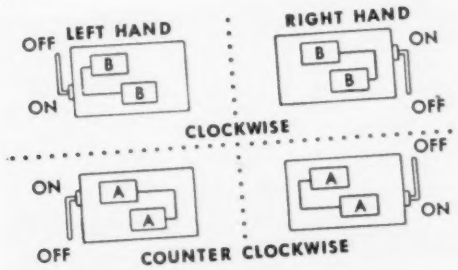
New SHIPPER ROD SWITCH

Compact CLASS 9002 TYPE K shipper rod switch has die cast enclosure with conduit openings at each end

Built to Meet TEXTILE INDUSTRY Requirements

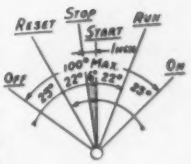
No other design has all these features necessary to fully meet Textile Industry requirements!

Four Operating Positions are possible with a single device—operating arm is symmetrical with respect to travel and location . . . two sets of connections are provided on each contact mechanism. One device meets all installation requirements.



Slotted Operating Arm can be turned to any angular position on shaft and provides for necessary linkage adjustment to give correct "throw."

Operating Arm Travel is ideal for operator convenience and safety. Only 6° movement is required for "doffing." Contact overlap between INCH and RUN positions is adequate to insure closing of the starter maintaining circuit. Overtravel provided at each end prevents "creeping" shipper rod from affecting operation.



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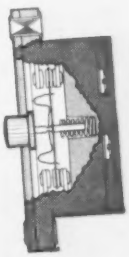

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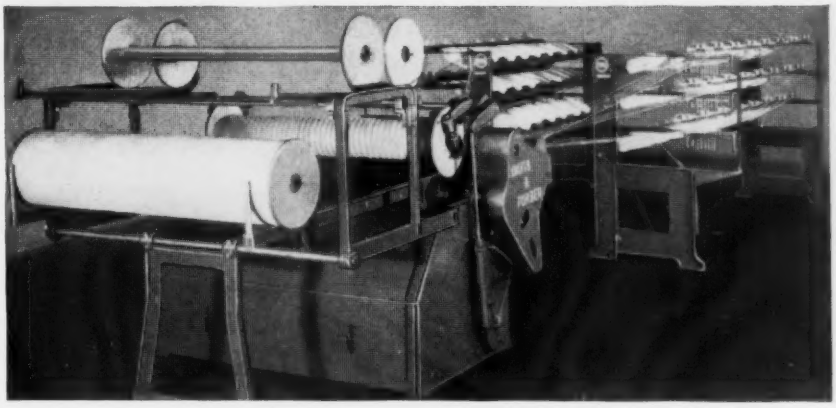
TEXTILE Equipment NEWS

Better Quality Spools Produced at Higher Speeds



Automatic controls and features are said to ease the work of spooler operators.

A new electro-pneumatic warp spooler said to produce higher quality spools at increased speed has been developed by Davis & Furber Machine Co., North Andover, Mass. Other advantages claimed are low cost, less work effort, silent operation, and use of automatic controls.

Up to 40% more yarn of certain types can be wound on spools due to the pneumatic compression feature. A firm, even pressure is applied at the point where yarn enters the spool, eliminating any slackening of yarn on the spool. The air gage is easily adjusted to the number of pounds pressure desired, and this pressure is constantly maintained by a safety valve. Noise and vibration are also reported greatly reduced, as the spool rides on a cushion of air.

The magazine creel is made in two sections, with one half of the ends on each section. This leaves a space in the center of the machine, permitting the operator to work between the creels and the yarn running to the spooler. Each section of the creel contains 48 large yarn packages, 24 of which are live ends. The remaining 24 are reserve packages tied in tandem to the tails of the live ends.

As the yarn comes from the creel to the front thread guide on the spooler, it is pitched away from the operator so that the ends may be more easily found for tying. The creel arrangement prevents the operator having to walk around the ends of the creel to the thread guides for finding and tying ends.

Upon entering the spooler through the front thread guide, the yarn travels around a ½-yd. driven measuring roll and over an idler roll, through an electronic stop motion, and then through the second thread guide to the spool. The driven measuring roll is designed to pull an equal yardage of yarn from each bobbin, and to give positive yarn tension to the spool. This feature is designed to eliminate slack ends, tight ends, or holes in the spool. The danger of stretching the yarn is claimed to be removed. Each end is of equal length and tension. A variable-speed V-belt pulley allows fine adjustment of the speed at which the measuring roll is driven, thus giving the tension required.

Spools are cross-wound by a cam-driven builder set to build a flat, even, "cheese." A more constant yarn tension when spools are run off onto the dresser reel is said to be assured. Spools can be split safely in any way that is needed.

Thread guides are provided with porcelain eyelets. The porcelain eyelets in the front guide rod are of the slotted, easy-threading type. Both thread guides are traversed to reduce wear on the rolls caused by the abrasive action of yarns traveling at high speeds.

Building of perfect spools is further assisted by two sensitive electronic stop motions. The first, located on the creel, eliminates much rethreading of broken ends because the machine is stopped before the broken ends have run up on the spool. Most ends are tied between the spooler and the creel, where they are most easily reached. The second stop motion is located on the machine between the measuring roll and the spool, and is easily reached and threaded. The sensitive mechanism will stop the machine if any end becomes slack.

A semi-automatic spool rack takes heavy lifting out of changing spools. The operator simply turns the pneumatic control lever which lifts the full spool off the drum and deposits it in the rack. As the full spool is being ejected, an empty spool is automatically placed on the drum, and the machine is ready to run.

Space is allowed to take three full spools while a fourth is being filled, but the rack can be made to hold more, if required. A magazine for three empty spools is located above the rack holding the full spools.

Spools are kept off the floor, saving space, and eliminating the danger of damaging the spool heads or soiling the yarn. A floor hand can service the spooler, thus leaving the operator free to run the machine.

Speeds are variable and easily adjusted by rheostatic control. The machine speed of the spooler is from 275 yd. per min. to 550 yd. per min.

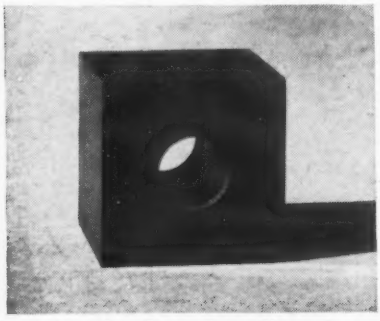
A braking action is built into the 1½-hp. motor which brings the machine to a quick, smooth stop. The machine traveling at 500 rpm. is said to be brought to a stop in less than 2 yd.

The operator works in a small area which saves much of the moving about required by old machines. The pneumatic control lever and the start-and-stop switch are placed on the front of the machine in the operator's working area. An extra pushbutton station on each section of the creel also saves steps. An inching switch included in the pushbutton station on the machine permits the operator to nudge the spooler ahead slowly to facilitate threading and tying the ends.

The output of operators who are already using these new spoolers increased immediately when they were put to work on them. In one early installation, two electro-pneumatic

warp spoolers replaced ten old machines, according to the manufacturer.

Graphite Bearing Usable Under Water or Heat



Immersion bearings of graphite-resin compound take on a high polish in operation under water.

A self-lubricating, high-strength, low-friction, chemically inert material is being produced by the Anagra Co., Hastings-on-Hudson, N. Y. for such uses as immersion bearings in such finishing equipment as dye jigs, continuous washers, and in bleaching equipment.

Anagra is said to take on a very high polish when immersed and operated in dye liquors, bleaching solutions, or water, reducing bearing drag to the absolute minimum and giving long life and trouble-free bearing service. Simple one-piece construction as well as non-contaminating and low-wearing qualities are said to make Anagra well suited for this application.

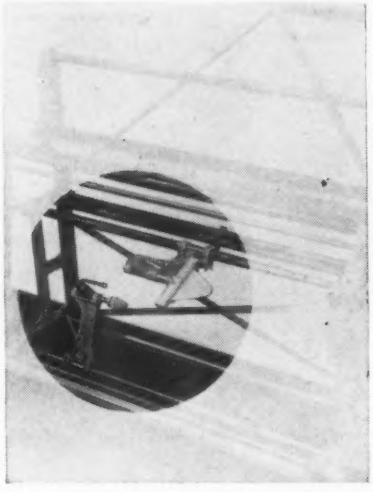
Permanent self-lubricating characteristics as a result of its graphite content also permits continuous dry operation. In bake ovens, dryers, and mangles, where high-temperature conditions do not allow the use of wet lubricants or proper maintenance, Anagra bearings and pillow blocks can be used to excellent advantage, the manufacturer states.

Anagra can be molded or machined to any size or shape. Successful applications include fluid-sealing rings, turbine packing rings, rotary joint seals, and square- and sleeve-type bearings all requiring an anti-friction and strong material.

Inspecting Machine Device Saves Time and Trouble

A new development called the tube release, designed to simplify the process of putting on and removing piece goods from the CRA measuring and inspecting machine, has been announced by Cutting Room Appliances Corp., 45 W. 25th St., New York, N. Y. The device is said to save many minutes in changeover time and to eliminate the difficulty usually encountered when placing materials on the machine.

A simple lever arrangement permits the worker to set the piece goods on the machine, as well as to adjust it for various material widths, without jamming the tubes. Moreover, the tube release is said to conserve the paper tubes, as it is "pressure adjusted" and does away with damaged and ragged tube ends.

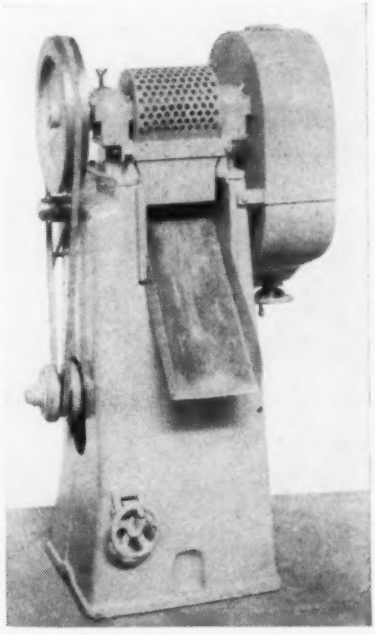


The tube-release device is designed to save time and effort in changing tubes of fabric on a measuring and inspecting machine.

Truck Designed For Handling Rolls

A new heavy-duty roll-handling truck adaptable to handling of large- and small-diameter rolls of cloth has been announced by Ironbound Box & Lumber Co., Hillside, N. J. Rolls can be handled which have comparatively small diameters and lengths not exceeding 5 ft. The 6-ft. diameter body keeps the load centered regardless of number of pieces stacked. Product cannot roll off, the company states. The unit is fabricated from steel pipe, is all welded, and is equipped with 8-in. diameter semi-steel or rubber-tired wheels.

Fiber and Flock Are Cut by Rotary Cutter



Cut fiber up to 8 in. and at rates up to 20,000 cuts per min. can be produced by this new machine.

Uniform lengths of staple can be continuously cut into pre-determined lengths with a new No. 72-E rotary fiber cutter being produced by F. J. Stokes Machine Co., 5900 Tabor Rd., Philadelphia, Pa. The machine is capable of 500 to 20,000 cuts per min. (single top). Length of cut and speed of machine are easily adjustable during the machine operation.

An unusual development of the new machine permits cuts from flock lengths to 8-in. lengths. For flock cutting, the machine can be furnished with a special suction hood which draws a flow of air from the feed rolls to and around the cutting knives. The cut fibers, even though fine, are said to lie parallel and are drawn away from the cutting head for collection in bags.

Four interchangeable rotary cutter heads; three standard with one, two, and four blades each, and one special head for cutting flock, permit a wide range of cuts to closely accurate lengths. Where cuts longer than 8 in. are desired, Stokes can modify the heads to accommodate the extra lengths.

Self-sharpening knives; tension release for feed; clutch for quick-stopping feed rolls; and hand-wheel adjustments, while operating, for speeds and length of cut are outstanding features of the rotary cutter. Designed for high production, the machine is said to be able to cut rayon, silk, flax, jute, wool, and cotton in lengths required for flock, mixed spin-

5 DISTINCT ADVANTAGES

The spindle top fits the "cushion grip" with a gentle squeeze to make top-drive contact, which breaks sharp and easy without drag or pull in doffing.

A straight side bobbin and a straight side spindle acorn mean constant uniform clearance at this point, which is essential in maintaining top suspension drive.

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STRAIGHT SIDE WARP SPINNING BOBBIN
(with added toughness)

Two years of experimental development have now been followed by two years of mill testing that started with single frame trials, followed by adoption—complete or limited.

No other warp spinning bobbin has been developed to incorporate all of the features of the SONOCO Bobbin which are proving their advantages in steadily increasing use.

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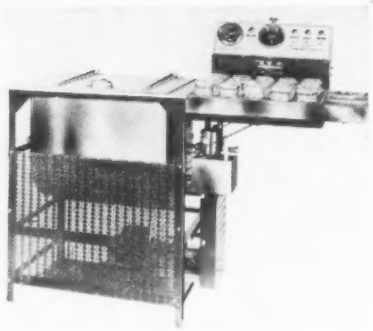
ning, and other special processes. It can also be used for cutting asbestos-copper brake lining, hemp, and sisal.

New Launder-Ometer Has Mounted Control Panel



Ease of operation and control is said to result from the new control panel on the Launder-Ometer.

An improved Launder-Ometer with a control cabinet for greater convenience to the operator has been developed by Atlas Electric Devices Co., 361 W. Superior St., Chicago, Ill.

This new cabinet, located directly behind the preheating loading table, contains all switches, pilot lights, indicating and control instruments in one compact unit. In addition, it has a direct-reading, 3-in. dial thermometer for keeping a constant and accurate check on the temperature of the water bath.

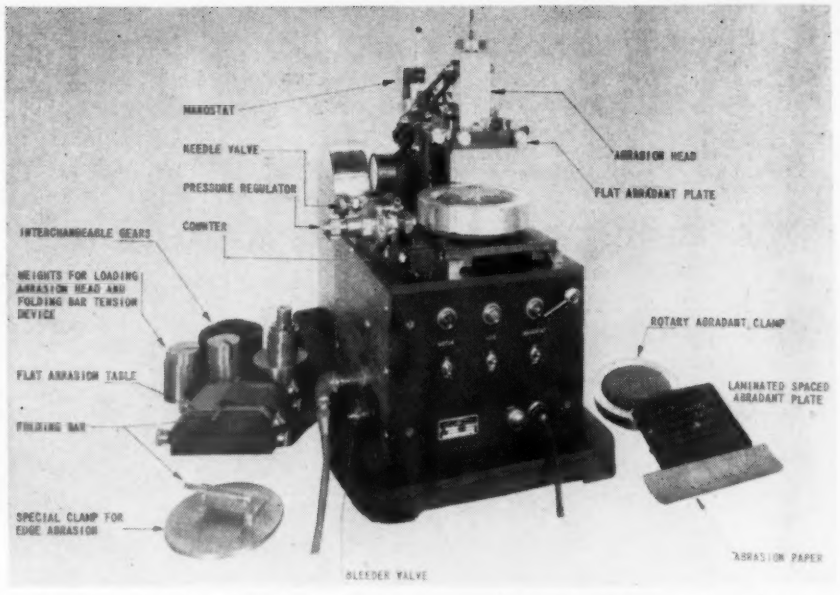
Now standard equipment on all Launder-Ometers, the new location of the control cabinet is said to add greatly to the ease of conducting tests and to enhance the appearance of the machine.

Wear Tester Produces Three Abrasion Actions

The new textile wear tester for use in Quartermaster procurement of textiles was recently developed in the U. S. Army Quartermaster Textile Materials Engineering Laboratory.

The abrader can be used to produce the three major actions of fabric abrasion—flat, edge, and flex abrasion. This instrument, with the controls upon which it is based, can provide a more complete evaluation than other less versatile instruments. It has been termed the Stoll-Quartermaster universal wear tester.

Recent Quartermaster studies of salvaged items have shown that physical deterioration of textiles can be characterized as approximately 30% flat or plane abrasion, 20% edge abrasion, 20% flex abrasion, and 30% other physical and chemical actions. These figures have indicated the necessity for a machine which will not be limited to evaluation of a single type of abrasion, but which will take into consideration all three major actions.



Edge, flat, and flex abrasion testing can be carried out by this new universal tester.

In flat-abrasion testing, the Stoll-Quartermaster wear tester maintains the sample under controlled tension and pressure throughout the conduct of a test by means of a pneumatically operated device. The sample is uniformly abraded over the entire contact area and from every direction. The mechanism provides for a uniform and elastic pressing of the sample material against the abradant and insures that the unit pressure, one of the most important influences in abrasion testing, is kept constant, even if the sample is not of uniform thickness. Another feature of the new machine is an electronic control which automatically stops the test when a hole of a given size is worn in the sample, thus eliminating operator judgment of endpoint, an important source of variability in many wear tests. The high reproducibility of the apparatus is demonstrated by a series of tests conducted on various samples in which deviation in the quantity of abrasion secured up to the endpoint was insignificant compared to the variability of the samples themselves.

For edge-abrasion testing, the pneumatically controlled sample head is replaced by a clamp which holds the fabric in a folded position. The folded edge of the sample is brought into contact with the abradant in either a uni- or multi-directional movement with precisely controlled pressure. An automatic endpoint stop is also provided for this type of test.

For flex testing, a folded specimen strip is placed between the abrasion head and a flat reciprocating table. The motion of the machine rolls and unrolls the folded fabric, causing a flex abrasion which can be measured either in terms of loss in tensile strength after a given number of cycles, or directly, as the number of cycles required to break the specimen. In the latter case, complete failure of the specimen is induced by the insertion of a tension bar within the fold of the fabric. When the test is performed with the tension bar, the fabric is subjected to a combined folding and abrasion action under controlled compression and stretching.

Carbonizing Dryer Holds Goods Flat

A new type of dryer, Model D, especially designed for use in piece-carbonizing work has been developed by James Hunter Machine Co., North Adams, Mass. The dryer holds the cloth flat while the carbonizing process is being carried on. The cloth is held on tenter pins, preventing rolling of the cloth. In addition, it is possible to apply higher air velocities than can be used in the roll-type carbonizer. These increased air velocities are said to result in faster drying and baking of the cloth. The faster action is reportedly much less harsh on the cloth and prevents yellowing of the cloth when sulphuric acid is used as a carbonizing agent.

Use of the tenter chain to carry the cloth through the carbonizing process is also said to prevent cloth stretching warpwise.

In the new dryer, cloth is introduced to the air blasts of the dryer at the bottom where it is possible to

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maintain low temperature. The goods progress upward to the top of the dryer where a higher temperature is maintained. The air-circulating system is so laid out and controlled that the dryer can be divided into four different temperature zones from bottom to top. The exhaust fans are located at the top of the machine, and since the temperatures are gradually increased from bottom to top, the relative humidity of the air is actually decreased due to the increase in temperature, preventing condensation of oil inside of the dryer.

Plastic Bobbin Has Unbreakable Heads

***Warpage and snagging** are eliminated by the construction of this new bobbin.*

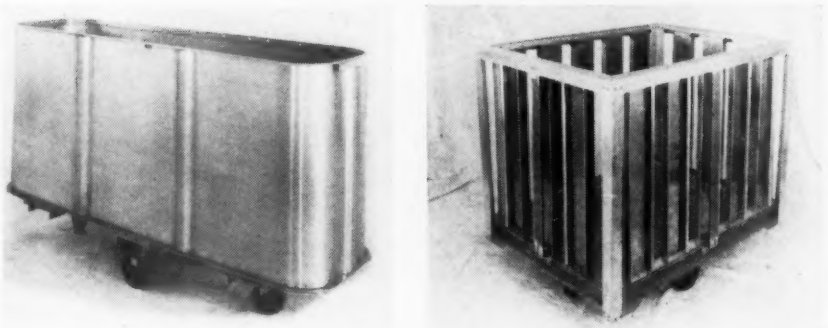
A new plastic bobbin with a laminated-reinforced-head construction has been developed by Plastomatic Corp., Wayne, Pa. The construction is said to make the head virtually unbreakable and to have the additional advantage of sealed, snagless edges which can be repolished. In addition, the head is designed to eliminate warpage. Higher speeds and longer life and reduced bearing wear are said to be possible because of the bobbin's dynamic balance. The bobbin will not absorb dye, grease, dirt, or moisture. The manufacturer claims that in tests the bobbin has been dropped from a height of 12 ft. without chipping, breaking, or shattering the heads.

Patterns Reproduced and Printed by New Process

Xerography, a dry electrostatic process for reproducing designs on fabrics, has been developed by Haloid Corp., Rochester 3, N. Y. The dry process, more fully developed, may well revolutionize printing methods.

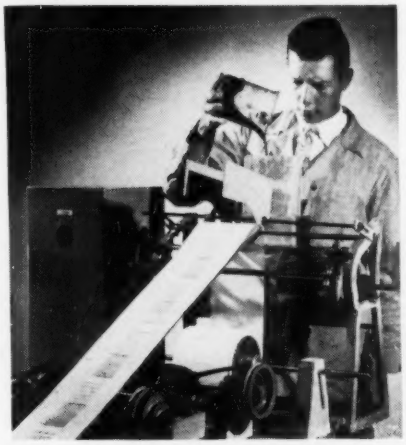
The reproduction process uses a plate coated with a material which is an electrical conductor in light but an insulator in the dark. The plate's surface is electrically charged by passing it beneath a corona discharge. The pattern to be reproduced is then placed over the charged plate and exposed to light—or the pattern may be projected onto the plate. Positive charges disappear where struck by light, remain where the pattern blocks light passage. A negatively charged resin powder is then passed over the plate, and powder particles adhere to the remaining charges. Fabric to be printed is placed over the plate, and both plate and fabric are again exposed to the corona discharge. The charged fabric attracts the powder from the plate, and a positive image of the pattern is transferred from plate to cloth. Print is made permanent by

Hand Trucks Are Corrosion Resistant



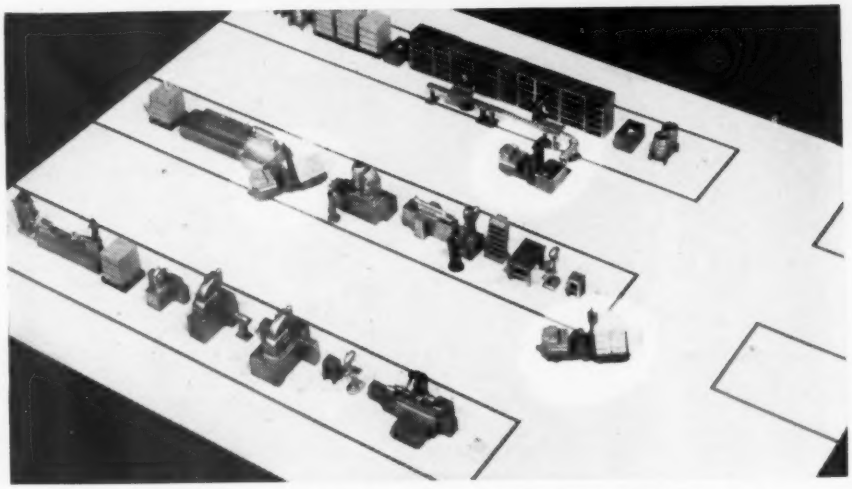
***A new roving truck and a washer box truck** have been developed by the DeKalb Metal Fabrication Co., Stone Mountain, Ga. The all-aluminum trucks are light in weight and resistant to corrosion. Caster assembly is designed for use on conveyor systems. The roving truck is 48 in. long, 18 in. wide, and 24 in. deep, weighs 45 lb. without casters and has a capacity of 800 lb.*

The washer box truck is 54½ in. long, 36 in. wide, and 24 in. deep and weighs 125 lb. It has a capacity of 1,500 lb.



***Dry printing** of paper at 600 ft. per min. rate has potential use in textile industry.*

Model Fork Trucks Aid Plant Planning



***Scale-model fork trucks** are being offered for planning use of fork lift trucks in new plant layouts by Towmotor Corp., Cleveland 10, Ohio. The model is a ¼ in. to 1 ft. scale model of Towmotor's LT-40 lift truck. The model is 1½ in. high, 2½ in. long.*

The realistic miniature Towmotor fork lift trucks are easily moved about, rolling freely on tiny scale-size wheels; and can carry scale-model loads on the forks.

Visual planning with scale models aids in locating water, steam, and power lines, provides an accurate estimate of floor requirements and loads, and assists in planning the most effective and economical materials-handling routes.

BETTER SERVICE to CUSTOMERS

Comes with the Speedier Production of the

EDMOS High Speed TYPE EEM

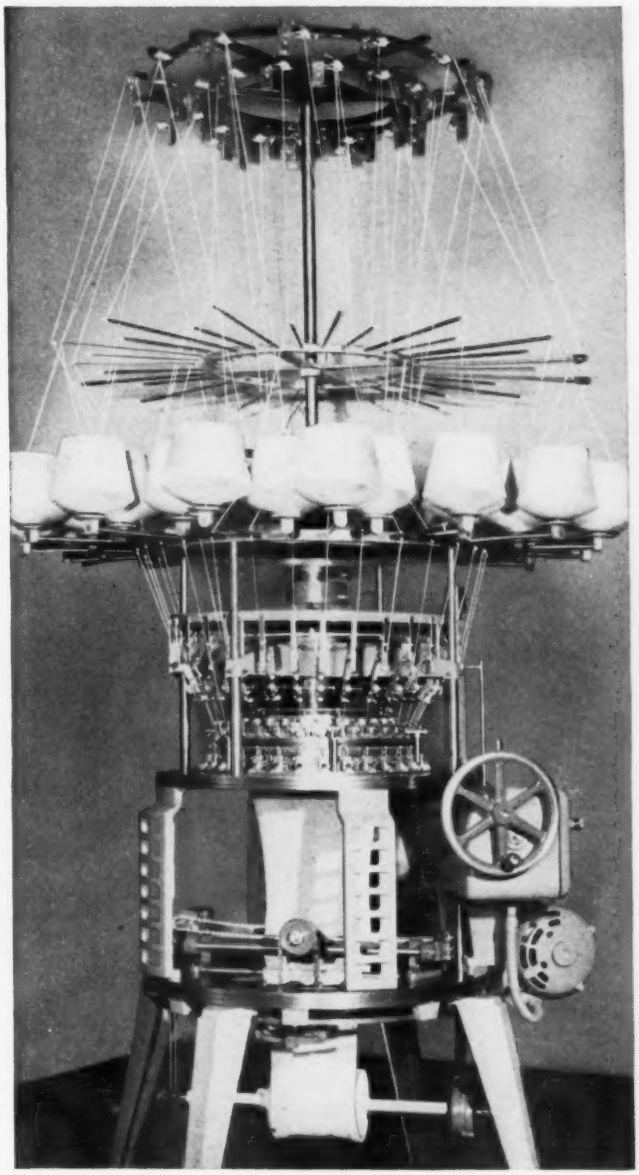
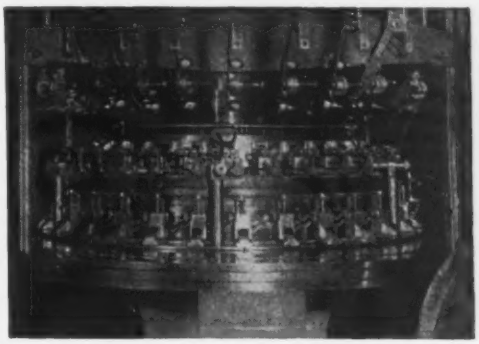


Illustration: Model Shown Is 20" - 30 Feeds

The high knitting requirements your customers demand call for the finest machines to do your work. Look at EDMOS Type EEM Super Multi Feed Plain Rib Body Machine—see it in action at the EDMOS plant—and you'll agree it has just what you need: UTILITY—designed for Swiss Rib, yet ideal for "T" shirt and polo shirt fabrics. HIGH PRODUCTIVITY: Type EEM has 1½ feeds per diameter inch; produces up to 4 times more work. ECONOMY: Simplicity of parts, easy to operate and maintain. Available for prompt delivery.



Complete Size Range:

12"—18 feeds	18"—27 feeds
13"—19 feeds	19"—28 feeds
14"—21 feeds	20"—30 feeds
15"—22 feeds	21"—31 feeds
16"—24 feeds	22"—33 feeds
17"—25 feeds	23"—34 feeds
	24"—36 feeds

Famous EDMOS Features:

Simplified camming system both on cylinder and dial

Gear driven dial; Oversized dial shaft

Adjustable motor mount

Accessibility; Interchangeability

EDMOS PRODUCTS CORP., 13 Christopher Ave., Bklyn 12, N. Y.

heating a few seconds to fuse resin to fabric.

Printing without ink may be done by causing the powder image to adhere permanently to a metal plate. The plate is placed in a press which incorporates (1) a charging device by which the plate is charged, (2) a mechanism by which the image is developed by a powder developer, (3) a mechanism for transferring powder image to fabric, and (4) a mechanism for fixing powder to fabric. A model press for printing paper has been developed which prints at 600 ft. per min. As the process is completely electrostatic and dry, no heavy pressure rolls or weighting devices are necessary.

Shipper-Rod Control Station Features Flexibility

This shipper-rod control station can be adapted to right- or left-hand, clockwise or counter-clockwise, directions of operation.

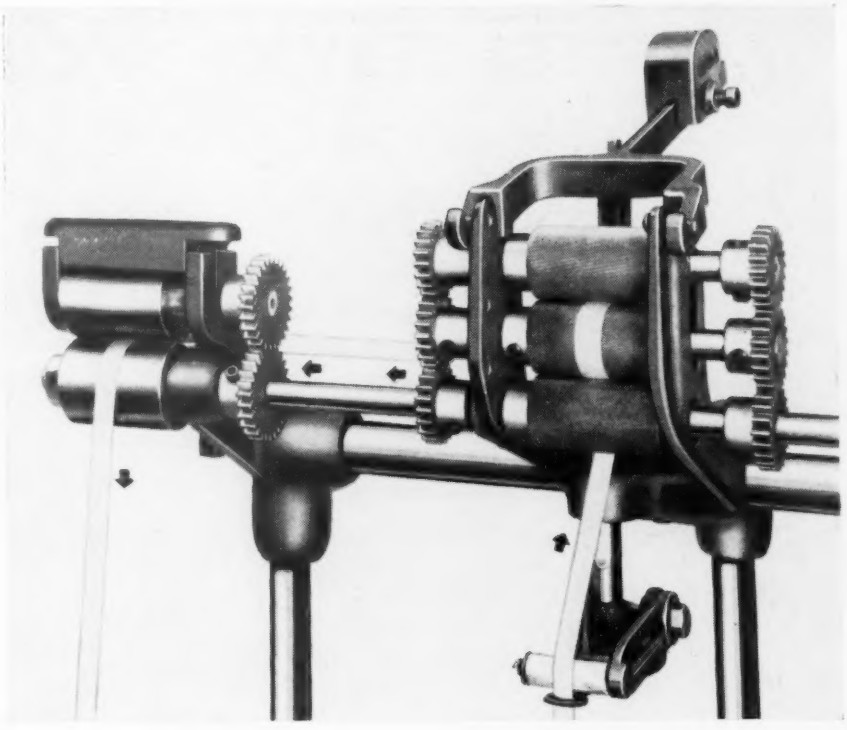
A new shipper-rod-operated control station, specifically designed to meet the needs of the textile industry, has been announced by the Square D Co., Industrial Controller Div., 4041 N. Richards St., Milwaukee 12, Wis.

Extreme flexibility is emphasized as one outstanding feature of the new switch. Right- or left-hand operation in either clockwise or the counter-clockwise direction can be obtained from this one device. A slotted operating arm, which can be adjusted to any angular position on the shaft, enables proper linkage adjustment to give correct shipper-rod "throw."

Positive quick-make and quick-break contact action is said to be assured by use of two precision snap-switch mechanisms inclosed in non-carbon-tracking melamine cases. Contacts are double break, silver-to-silver, and are non-overlapping. Contact mechanisms can be removed and replaced using only a screwdriver.

Inclosures are of a die-cast zinc alloy and are available in NEMA Type I general purpose and NEMA Type IV watertight construction. There are conduit entrances at each end and generous interior wiring space is provided.

Braider Take-Up and Let-Off Improved



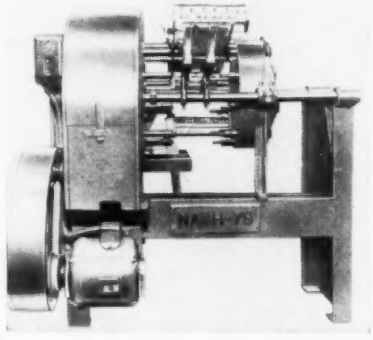
LET-OFF

A new braider let-off and take-up has been developed by New England Butt Co., 304 Pearl St., Providence, R. I. The new let-off has special gears with cut teeth of fine pitch for smooth drive and uniform tension.

TAKE-UP

The new take-up has specially designed cut gears of fine pitch for smooth running. Gears on both sides give equalized, uniform drive. Wide spacing between gears reduces tilting of rolls and assures more constant tension.

Forty Bobbins Polished per Minute



Refinishing filling bobbins at the rate of 40 per min. is claimed for this new polishing machine.

A new automatic polisher for refinishing filling bobbins has been developed by J. M. Nash Co., 2360 N. 30th St., Milwaukee 10, Wis. The polisher, No. 79, is designed to clean, buff, and polish automatically at production rates from 20 to 40 bobbins per min. No harsh abrasive action is used during the operation, and the original finish coating of the quill remains intact. Using the No. 79 polisher helps eliminate broken picks, as it assures quills that are free from sharp surface projections and burnished to a high dry luster. Dirt is removed from the grooves. An additional operation is also performed on the head of the quill as a fine wire brush removes dirt and rust from the metal rings.

Repeated polishing of quills through the Nash No. 79 is said in no way to damage the quills or reduce their life. The machine was designed to permit mills to set up a standard procedure on quill polishing with quills being constantly routed through the polisher to keep them in perfect condition. Better run-off of the yarn is said to result; and as long as quills are clean, it is impossible to transfer dirt to the

YALE FORK TRUCK

YALE WORKSAVER

Move materials faster, safer and at a saving with Battery Electric Trucks and EXIDE-IRONCLAD® BATTERIES

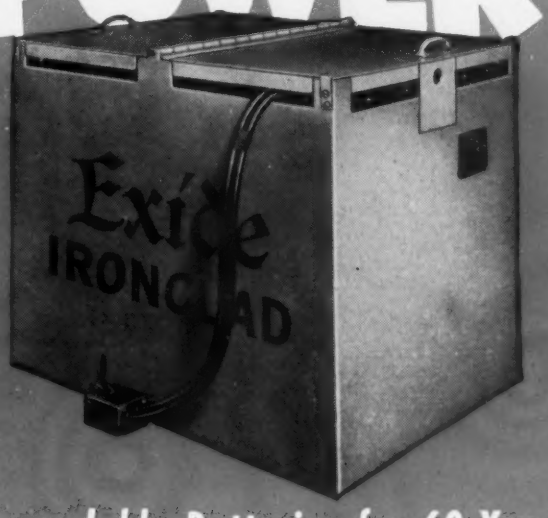
Put battery electric trucks to work saving and earning for you. In thousands of plants, with material handling problems like yours, they are helping to boost production and cut costs. In fact, industrial management has found that materials handling is one of the few remaining fields where major economies can be effected.

Battery Electric Trucks can save time, manpower and money for you in loading and unloading cars and trucks . . . in handling materials in process . . . in hauling and tiering in warehouse . . . in *every* materials handling job from receiving to shipping. And for dependable, long-lasting power, equip your trucks with Exide-Ironclad Batteries, the batteries that assure full shift dependability, day after day, year after year.

Exide-Ironclad Batteries have ALL FOUR of the vital characteristics of an efficient storage battery—high power ability, high electrical efficiency, ruggedness and long life.

Write for further particulars and FREE copy of Exide-Ironclad Topics. It covers latest developments in materials handling and shows actual case histories.

DEPENDABLE POWER



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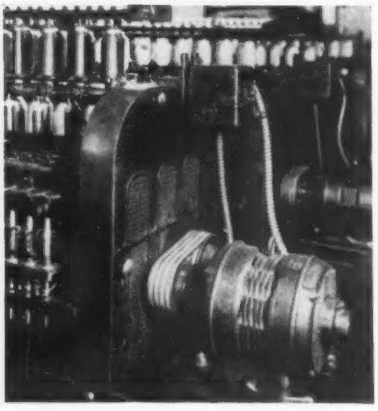
THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • *Exide Batteries of Canada, Limited, Toronto*

yarn. Only one operator is necessary to run the polisher.

It is only necessary for the operator to keep the hopper full. Quills roll down to pickup position and are automatically picked up by the headstock and tailstock spindles and revolved over polishing stations. The machine has ten spindles; and as the wheels revolve, each spindle successively picks up a quill. Quills do not revolve until shortly before reaching the head-cleaning brush. After each quill revolves through the polishing rack, it stops and drops off the headstock and tailstock centers in a stationary position onto a slide directly under the headstock and tailstock wheels. Powered headstock spindles drive the quill. Centers are rubber-faced with inserted stem to assure positive location and friction drive without damage to the quill. Tailstock spindles advance when picking up quill and retract when releasing the quill. Tailstock centers are pin type which locate into the hole on the small end of the quill, and end of the quill rests against a tapered rubber seat to secure maximum polishing over end of quill.

Maintenance cost of operating the Nash No. 79 is said to be negligible as brushes, applicator pads, and polishing accessories have long life and are economical to replace.

V-Belt Designed For Textile Use



***High-sarting-torque strains** encountered in frame drives are said to be overcome by the design of this new V-belt.*

A special textile V-belt for individual motor drives on spinning frames and similar equipment has been announced by Goodyear Tire & Rubber Co., Mechanical Goods Div., Akron, Ohio.

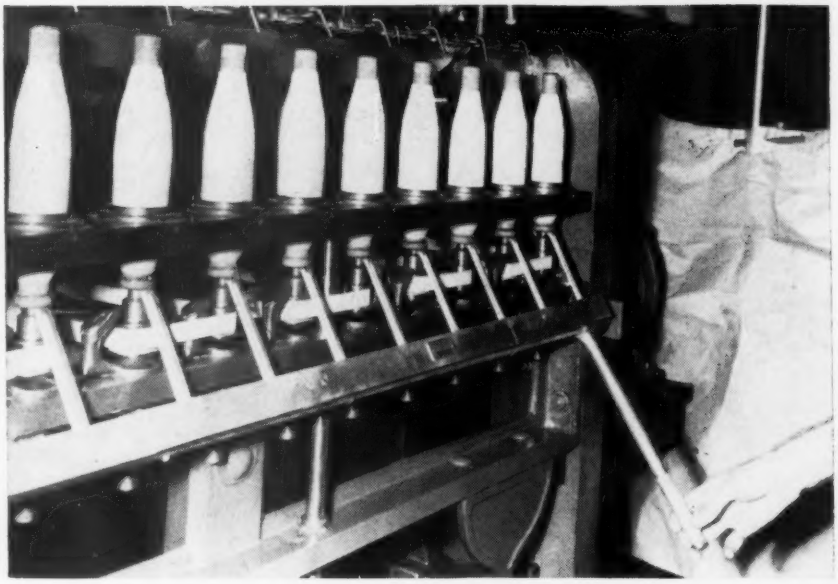
Known as the Goodyear Textile Special, the new belt is being made in sizes to fit standard "B"-section V-belt sheaves. Development of the special belt is said to follow extensive testing and research at several textile mills.

The belt is designed especially to withstand the severe overloads resulting from high starting torque to which frame drives are subjected. Tension members—the load-carrying components inside the belt—are said to be constructed to provide over 100% increase in breaking strength and to "give" under shock loads.

Tests show that life expectancy of the belt is greater than conventional V-belts, the company states. This is attributed to the extra thickness of the outside cover and improved belt design, assuring even distribution of the wearing surface on sheave grooves.

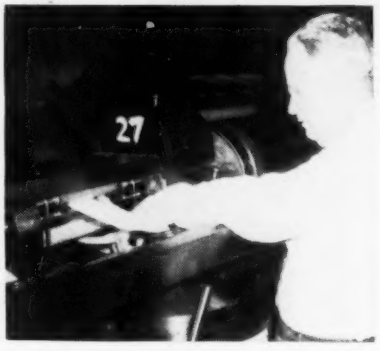
Greatest use of the new belt is expected on equipment requiring multiple V-belt drives.

Bobbins Lifted for Doffing



***Bent spindles** and skinned knuckles caused by bobbins sticking during doffing can be prevented by use of a new bobbin lifter being built by Precision Gear & Machine Co., Charlotte, N. C. The device was developed by the Callaway Institute, LaGrange, Ga., for Monarch Mills.*

Before doffing, each bobbin is lifted on its spindle by pushing down on a lever attached to lifting rods beneath each bobbin. The lifter loosens and raises all bobbins slightly, insuring easy removal in doffing.



***Clearers** can be pulled down with one hand and cleared with the other.*

Spring-Pressure Clearers Improve Drawing Sliver

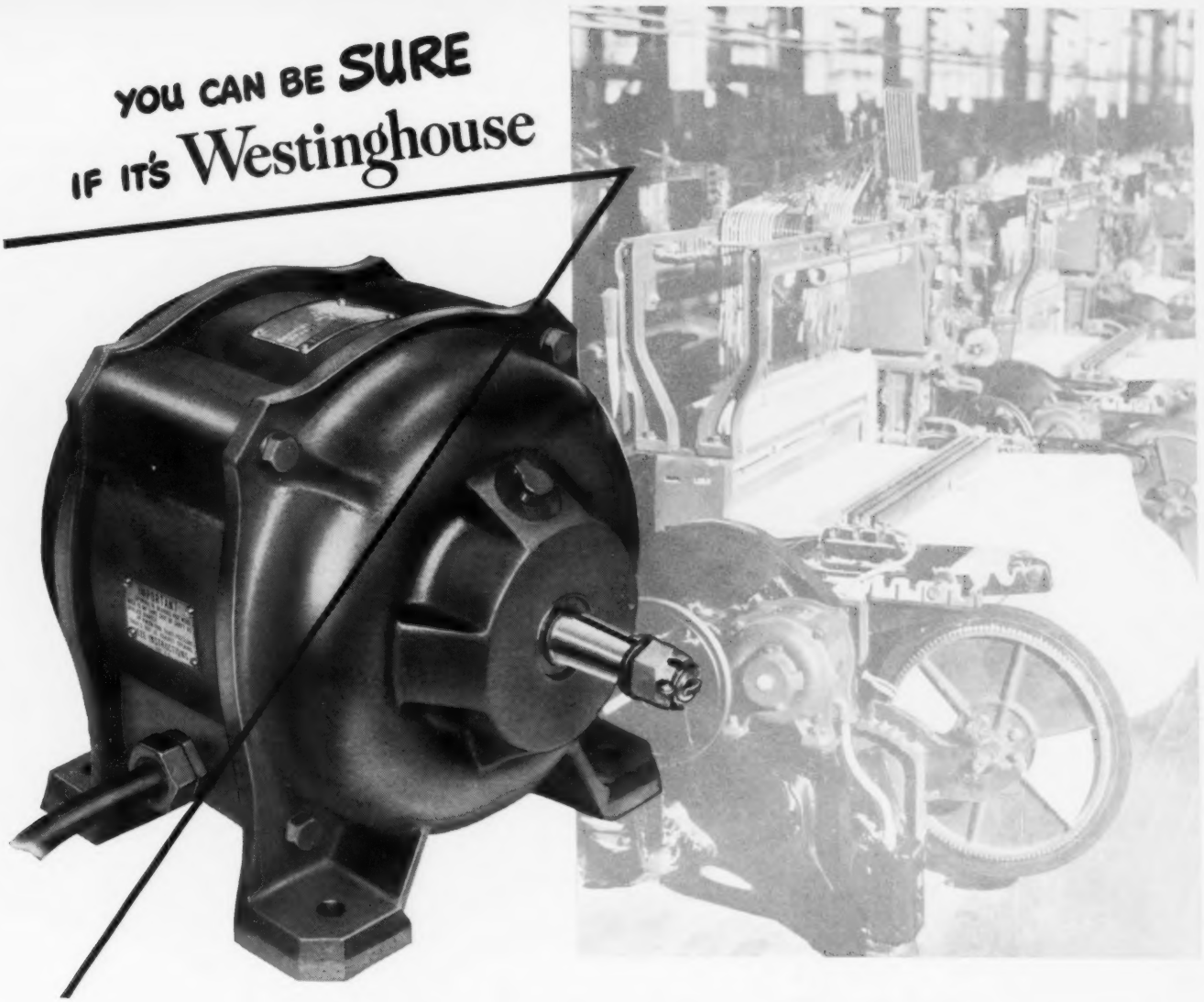
Improved cleanliness of sliver and resultant yarn is said to be accomplished by the use of spring-type clearers developed by W. O. Junker, 525 Glendalyn Ave., Spartanburg, S. C.

The new clearer is kept in contact with the rolls by a spring on each end; the springs exert an upward pressure against the clearer. The springs inclose a small shaft which is mounted on an adjustable slot and held in place by a nut. The shaft extends through an opening on the end of the clearer. The clearer slides up and down on the shafts when pulled down for cleaning or when depressed due to collection of waste on the clearer cloth. The shaft is adjustable at the base to allow for changing the setting of the rolls.

The spring on each end of the clearer is said to provide uniform pressure throughout the length of the roll, causing all parts of the roll to receive the same amount of cleaning action. As waste and foreign matter accumulate on the clearer cloth, the thickness of this material causes the clearer to be depressed against the upward pressure of the springs. This pressure is great enough to cause all other loose foreign matter to cling to that already collected rather than pass-

(Continued on page 240)

YOU CAN BE SURE
IF IT'S Westinghouse



Westinghouse Loom Motors Are *Performance Proved*

Forty years' experience, working hand in hand with the textile industry, has shown that textile looms require motors of specialized design. So, Westinghouse, in co-operation with loom manufacturers, developed a loom motor to meet the extraordinarily severe demands made on such a motor.

The superior performance of many thousands of Westinghouse Loom Motors has proved that they have all the features needed to assure maximum output from modern speed looms, with a minimum of energy from the line.

When buying new looms, be sure to specify Westinghouse Loom Motors for your protection. If you are using motors not specially designed for loom operation, you will find it will pay you to replace them with Westinghouse Loom Motors which fit any loom, new or old.

Get the facts on loom motors by asking for our new bulletin, B-3778. Address your inquiry to one of our branch offices or to Westinghouse Electric Corp., Box 868, Pittsburgh 30, Penna.

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Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Loom Motors

Pointers FOR SUPERVISORS

How the Management Team Can Build Better Human Relations

By GLENN GARDINER

WHAT'S BEHIND A GRIEVANCE

GLENN GARDINER

Things are not always just as they appear on the surface. The grievance a worker presents may not actually be what is really bothering him down deep. It may only be the basis for opening up a discussion which he will bring around to the real issue.

We see this kind of psychology at work today. In many parts of the textile industry there has been some slacking off of volume. We hear about reductions in labor force. When such talk goes around, workers also begin to feel less secure.

Many of the grievances being brought up today stem right back to this feeling of insecurity, although the grievances themselves may be presented on an entirely different basis.

In view of this, the supervisor must learn to look beneath the surface, and find out the real reason for the grievance. He will find in a great many cases that the underlying reason for the grievance is not hard to expose. It is a feeling of insecurity.

Admittedly, operations in a number of textile mills have slowed down. Even if your mill has not been affected, there is an under-current of speculation whether sooner or later, this general trend will strike home. Workers wonder whether they will be laid off, or whether their hours will be cut. In many instances, workers have been piling up large overtime checks, which are fast being whittled down.

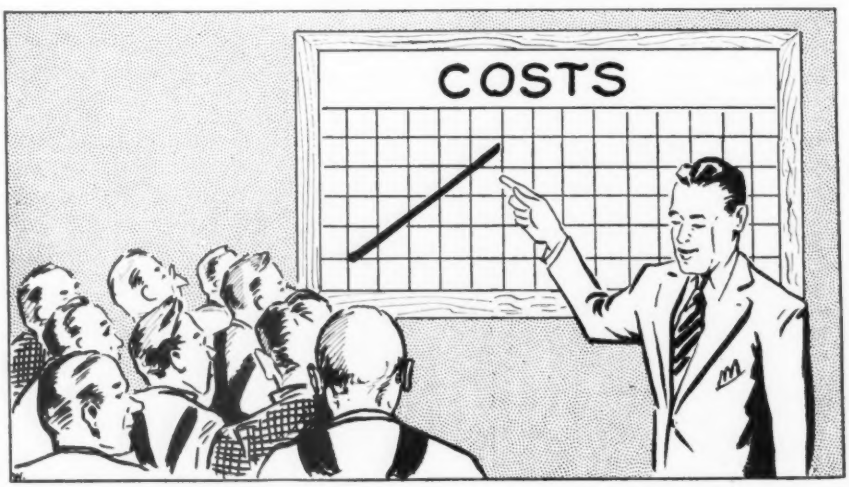
Obviously, the worker cannot come to the supervisor and demand that machines be kept running when there is no market for the goods. Naturally, the supervisor and every member of management would rather be going at full production. No one likes to cut down hours or lay people off. It's an unpleasant task for the supervisor. Besides, it's bad for business. A company cannot make profit unless it is producing. Whether or not he reasons it out, the average worker understands these basic facts.

But the feeling of job insecurity is not dispelled by logic. As a result the worker becomes easily irritated over minor matters. Sometimes he reasons that "a good offense is the best defense." He complains that his workload is too heavy. Since the supervisor represents management to him, he begins to harbor a feeling of resentment against the man who may be telling him that his hours must be cut. The slightest change of attitude on the part of the supervisor may be interpreted as discrimination.

Simultaneously, the supervisor himself is not at his best during a period of curtailment. He dreads the job of laying-off men. His own job security might eventually become involved. He's bothered with this mounting crop of grievances, many of which are difficult to adjust, because they stem from such vague sources. At the same time, more than ever, he is pressed to keep costs down—quality up.

What can the supervisor do?

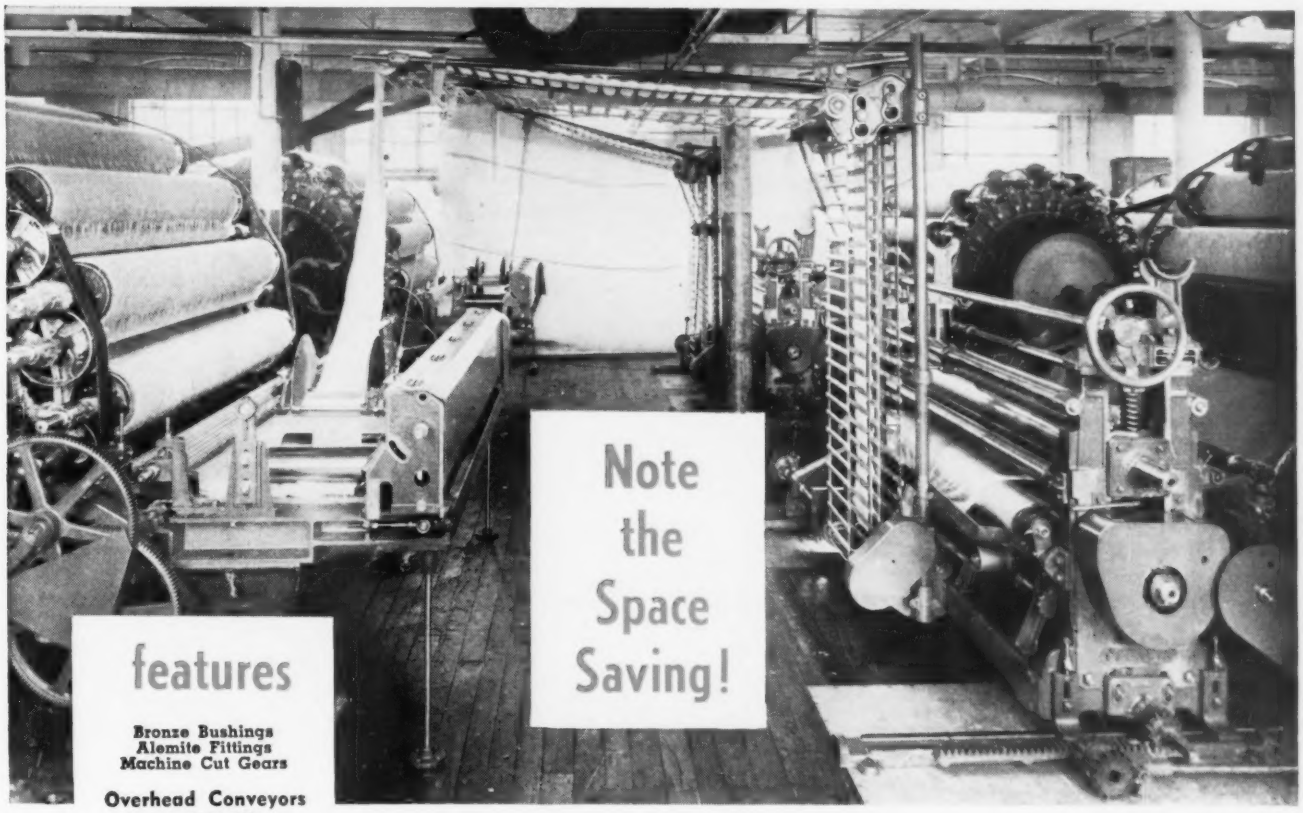
1. First, he must develop within himself an attitude of calmness. The philosophy that "life and its problems come at you only one at a time, and no one day can get you down," may help. In fact, just the minute he recognizes the cause of the grievances that are springing up, and realizes they are not the result of poor supervision, but of outside conditions, he is better equipped to approach them constructively.
2. Give the workers as many facts as possible. Sometimes in a mill where curtailment takes place, only one or two departments must be reduced. Immediately, everybody visualizes himself as being out of a job. Explain something about the over-all mill prospects. How sometimes it is necessary to cut down only part of an operation. How a change in the type of material manufactured may affect some departments but may even mean expansion of others.
3. Discuss each grievance fully. Keep in mind the need of probing for the hidden cause. Make workers see that the better they cooperate, the more secure their jobs will be.
4. Develop a sympathetic attitude. Workers really have a problem, and they appreciate understanding. Don't be too irritated. Be helpful. Put yourself in their shoes. Overlook arguments that may seem irrational. Above all, don't seize the situation as a good opportunity to "get even."
5. Make a real plea for quality and economy. Show the workers that quality workmanship and lower costs will keep a product going when competitors may be slack. The public hasn't stopped wearing clothes, nor buying house furnishings. But they can now look around to get the best quality for their money. We're in a buyers' market for textiles.



Workers who know the facts about rising costs, their possible causes and effects, can often help hold costs down.

DUESBERG-BOSSON of AMERICA, INC.

OUR PATENTED PERALTA MACHINE AND NEWLY DESIGNED INTERMEDIATE CENTER BROAD BAND FEED



features

Bronze Bushings
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Overhead Conveyors
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Two Vertical Supports Less Vibration
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Width of Woolen Band Adjustable—2" to 11"

Feed Table
Heavier Design
V-Belt Drive
Variable Speed Sheaves
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Prevent Web from Sticking

for: **(a)** Removal of Paint, Tar, Vegetable Matter.
(b) More Uniformity of Yarn.
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Duesberg-Bosson of America, Inc.

351 Harris Avenue, Providence, R. I.

Round Table

FOR EXCHANGE OF IDEAS—*The Round Table is open to letters from any and all readers discussing subjects relating to mill management, production, engineering, technology, etc. Names of contributors will be held confidential if so requested, but contributions must be signed with real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table,* TEXTILE WORLD, *330 West 42nd St., New York 18, N. Y.*

Half-Hose Man Cites Insurance Plan

What ever became of T.W.'s suggestion for prosperity insurance in the textile industry? I should like to see this plan again and to have some discussion from half-hose-mill men on the subject. We certainly could use some plan right now in the half-hose business. Wary buyers let the mills carry the inventory in a pre-Christmas season that normally would be pretty good. We fill short orders on shorter notice and are running about 40% of capacity. Some large mills closed entirely for a week or so, then restarted on short time.

The slump started at my mill last March, but some of the marginal operators began to sell their war-resurrected machinery last year. I think that these war-bred marginal mills flooded the markets and, if in business now, are making price concessions to buyers.

I am aware and proud of the small beginnings of many of our largest North Carolina hosiery manufacturers, some of whom can remember when a $100-per-week payroll was tops. (R-444, Hickory, N. C.)

(To Hickory reader, a copy of "Plan for Insuring Prosperity" by Edwin D. Fowle, publisher of TEXTILE WORLD, *from March, 1945 issue. Ed Fowle suggested the whole industry get together and establish an insurance plan that, among other things, would cover the inventory value of goods produced during a business recession. Round Table invites comment on this plan. Copies of the editorial are available to interested readers.)*

Spinning Yards Don't Equal Spinning Hanks

An industrial-engineering firm engaged for many years in balancing production between departments of cotton mills found a consistent gain between carding and spinning production in most of its mill surveys. The gain remained constant in quantity at about 2% in their week-to-week production and waste totals and in their 26-week production and inventory accounting.

A check on other plants showed a similar gain with actual weight of waste (process and reworkable) added to the production figures. The gain was not peculiar to any particular line of goods, geographical location, or manufacturing methods. The mills surveyed were on diversified products: sheetings, medical gauze, sewing threads, etc. The mills used both conventional and long-draft roving and spinning.

The engineering firm computed and analyzed all factors of control or processing that appeared to influence the problem, and in the following they are listed with a condensation of the analysis.

1. **Humidity and regain variation.** Most mills ran higher relative humidity in spinning than in carding, and an increase in regain caused some gain in spinning production. Typical examples of dry and wet bulb reading:

Carding
Dry: 75° Wet: 64° F. R.H.: 54%
Regain: 7.1%

Spinning
Dry: 80° Wet: 71° F. R.H.: 62%
Regain: 8.0%

Increased regain in spinning: 0.9%

2. **Nominal instead of actual** yarn numbers and hank rovings. Precise balancing of production could not be obtained when nominal instead of actual

(*Continued on page* 182)

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"Hey—wait! That's not the new dye formula. That's my wife's cake recipe!"

FULLER TEXTILE BRUSHES

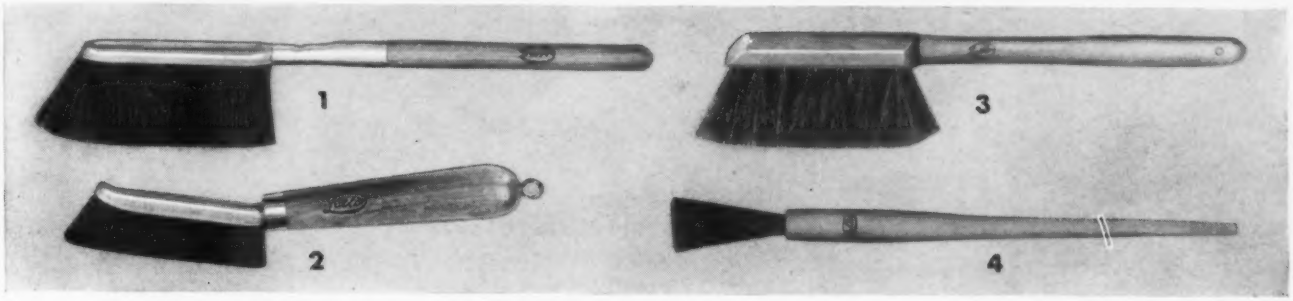
Specially Designed for Cleaning Textile Machinery

1 LOOM DUSTER
Durable Fullergript back, black horsehair, wide flare and long handle.

2 ROLLER BRUSH
Fullergript back. Cleans rollers and hard-to-get-at parts easily.

3 LOOM DUSTER
Soft grey hair, staple-set in solid wood back.

4 FINGER BRUSH
Stiff black horsehair, twisted-in-wire.



5 LOOM CLEANING BRUSH
Bassine, twisted-in-wire.

6 BOBBIN BRUSH
2" and 3" diameter twisted-in-wire.

7 HUMIDIFIER BRUSH
Twisted-in-wire, tapered end.

8 CHIMNEY BRUSH
Stiff black hair, twisted-in-wire.

9 DRAFT ROLLER BRUSH
Specially selected material, twisted-in-wire.

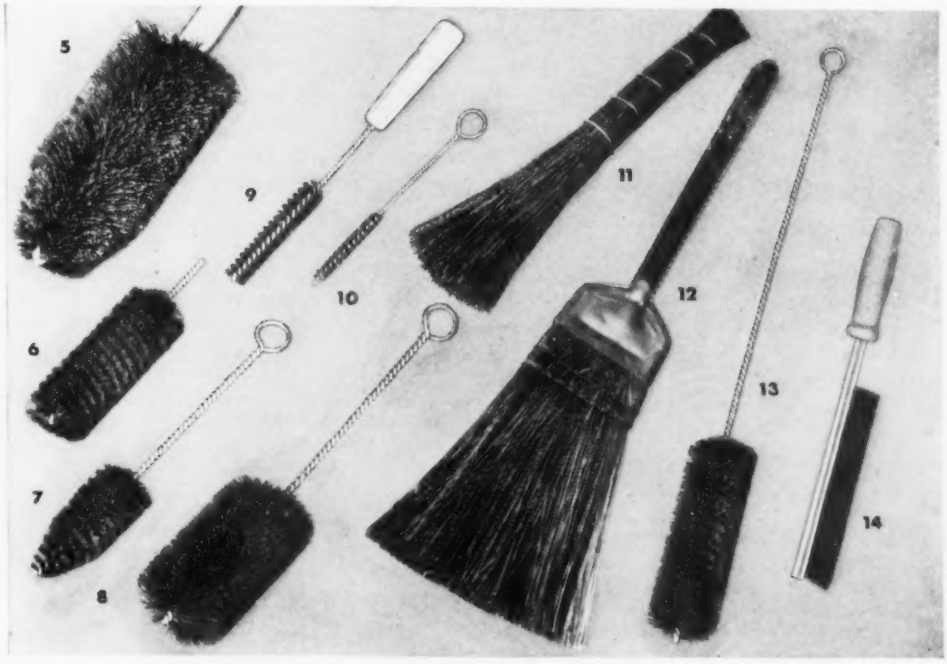
10 EYELET BRUSH
Stiff bristle, twisted-in-wire.

11 FILLING GRATE BRUSH
Bassine fibers in firmly held construction.

12 SPINNER WHISK BROOM
Stiff bassine fiber securely fastened in one-piece metal casing.

13 SPINDLE OR ROLLER BRUSH
Black horsehair, twisted-in-wire, long handle.

14 ROLLER BRUSH
Black nylon, single row, Fullergript construction.



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Kinks AND SHORT-CUTS

Filling-Fork Damage Prevented by Metal Plate

✻ **PRIZE WINNER FOR NOVEMBER**
(August contest)

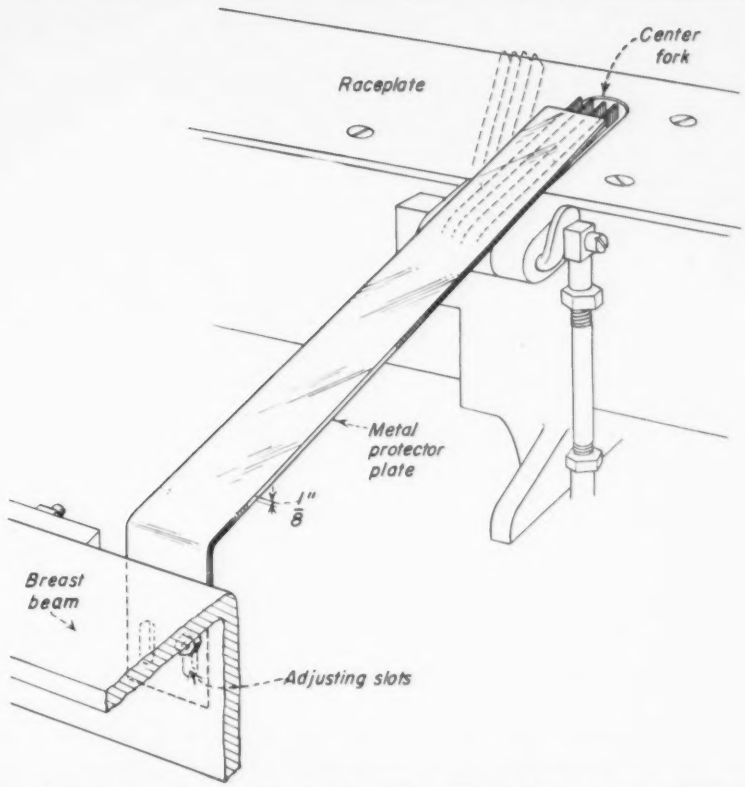
On our fancy-dress-goods looms, we sometimes have trouble with the center filling fork rising on the backward movement of the lay and sticking through the cloth or breaking out a number of warp ends. This damage occurs, of course, only when the fork rises too soon because of a broken spring or some other defect of the fork mechanism. But the cost of second-quality cloth on these looms makes it economical to prevent filling-fork damage.

We use a protector plate over the fork to stop it in case it tries to rise too early. We've found that the plate is easy to make and is quite efficient.

With the reed at front center, measure the distance from the breast beam of the loom to within ⅛ or ¼ in. of the reed. Get a piece of sheet metal about ⅛ in. thick and 2 in. wide. Cut a length of the sheet metal so that it can be fastened to the breast beam of the loom, bent over the filling fork as shown in the sketch, and extended to within ⅛ or ¼ in. of the reed. The bolt holes through which the plate is fastened to the breast beam should be elongated so that the plate can be adjusted up and down.

Fit the plate just under the cloth. It doesn't matter if it touches the cloth. Of course, the plate, particularly the corners and edges, must be smooth.

If the filling fork tries to rise too soon as the lay is on its way back from front center, it strikes the plate and is held down away from the cloth. (K-1002) *Bernard Inman, Yorkshire, England*



***Filling-fork damage** that results when the center filling fork rises too soon because of a broken spring is eliminated by this protector plate. The fork strikes the plate instead of the cloth.*

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✻ **You undoubtedly know of some kinks and short-cuts that are helpful to mill operation. Write them down and send them in. We pay promptly upon acceptance—*before* publication. In addition, we award *every month* a $25 Savings Bond for the accepted kink we consider most useful.**

Don't delay. Don't worry about dates. Send in your kink *now*. There is always a Savings Bond prize contest going on!

Don't take time to polish up your writing. We'll do that. Don't waste time to make a finished drawing, as our draftsmen will take over. Just write enough details and do enough drawing (if any drawing is necessary) to make clear to the editors how your idea works and what machine or process it is applicable to. Photos can be sent.

Look over the kinks in this and other issues. They will offer you some useful ideas, and they will also suggest other ideas you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments that are of merit—anything that will help production, improve quality, or cut costs.

Writing kinks is easy. It's fun. It's profitable. Give it a try. *Now.*

RULES OF CONTEST

1. No limit to number of entries.
2. New contest every month. Each contest closes with kinks received last day of the month. Prize winner is published the third succeeding month.
3. All kinks will be paid for on acceptance. Illustrations, when submitted, do not need to be finished drawings (penciled sketches are satisfactory); but they should be clear and complete. Prize awarded to winner is sent to him after publication. Good photos are acceptable.
4. Previously published material is not eligible for prize or publication.
5. Unless you advise to the contrary, we assume that we may sign your name to your kink when published.
6. Judges of the contest are editors of TEXTILE WORLD. Their decision is final.
7. Send your entries to either address:

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TEXTILE WORLD
330 W. 42nd St.
N. Y. 18, N. Y.

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TEXTILE WORLD
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Columbus, Ga.

Caustic Solution in Sewer Prevents Growth of Roots

Deciduous trees—the willow, box elder, poplar, and several other fast-growing trees—constitute a real nuisance to building owners and maintenance men. The fine, hair-like roots force their way into sewer-pipe joints and stop up the sewer.

A cheap and effective way to prevent such trouble is to place copper rings in the cemented joints when the line is laid. The chemical action between the copper, earth, and water has a destructive effect on the root fibers.

In existing sewers, an effective cure is to put a copper-sulphate solution in the sewer stream. The caustic in contact with the root growth will destroy the root fibers.

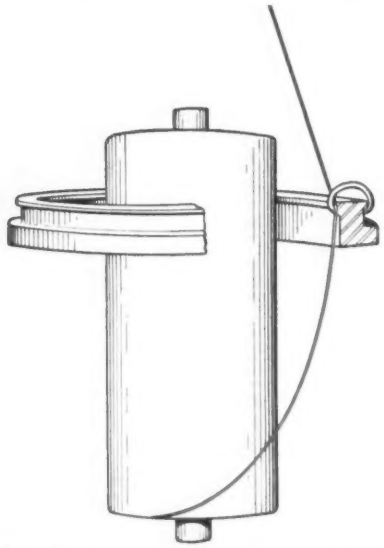
An average dose consists of a cupful of sulphate mixed with three cupfuls of warm water. Pour the solution into the sewer at such a time that the sewer will not be flushed for a few hours. Several applications may be necessary where more than one pipe joint is involved. *(K-1016) Donald P. Ziemke, Oak Ridge, Tenn.*

Spinning Ring and Traveler Stop Worsted Kinking

In winding 70s hard-twisted worsted hosiery yarn from tubes to cones on a No. 90 winder, we had a great deal of trouble with the yarn coming off unevenly. When we tried to unwind it over-end, two or three coils of yarn would come off at one time, destroying tension on the yarn and often permitting the yarn to twist together. When we tried to pull the yarn off at right angles to the tube, tension on the yarn was disturbed by the difference between winding speed at the base and the top of the take-up cone. In either case, if an end broke, the yarn snarled up.

We tried several types of flyers to unwind the yarn, but none of them was successful. We finally solved the problem by backwinding with a spinning ring and traveler.

The ring can be mounted on the side of a box of suitable size. The box should be high enough to support the ring about 1 in. below the top of the tube. *(K-1007) Walter A. Simond, Franklin, N. H.*



High-twist worsted hosiery yarn can be wound from a tube to a cone, with little or no trouble from kinking, by the use of a spinning ring and traveler. The ring can be mounted on the side of a box about 1 in. below the top of the tube.

Wire Holder Used For Soldering Small Parts

Soldering small and intricate parts can be done better with long, tweezer-like tongs for holding the parts. Such tongs can be made from a piece of harness-mount wire or other suitable wire. Cut a 16-in. length of the wire and form a loop in the center as shown here. Grind the ends to an even length and flatten the ends with a hammer. (K-959)

Rayon-Yarn Lot Checked For Yardage and Pounds

One of the important jobs in rayon weaving is to keep check on the yarn received and the yarn woven into cloth. We call this job clearing a lot of yarn for inventory. The method we use is as follows:

Suppose Lot 001 is rayon filling of 100 denier, 60 filament, 58/60 tpi. The total pounds of yarn received were 43,603.49. The average yards per pound, as determined by tests, were 37,250. We allow 2% for waste.

Quality 703 produced 103,355 yd. of cloth. Weight of filling in this cloth was 8,816.18 lb.

Quality 705 produced 429,991 yd. of cloth. Weight of filling was 36,033.25 lb.

Total pounds were 8,816.18 + 36,033.25 = 44,849.43 lb.

Pounds consumed (44,849.43) − pounds received (43,603.49) = 1,245.94 lb. gained, or 2.86%. (To this must be added 2% for waste.)

We see that the lot of yarn checks all right on the basis of weight. We now check on the basis of yardage.

Quality 703 had 3,113.04 yd. of filling per yd. of cloth (picks × width of cloth).

Quality 705 had 3,060.00 yd. of filling per yd. of cloth.

3,113.04 × 103,355 yd. of cloth = 321,748,249 yd. of yarn.

3,060 × 429,991 yd. of cloth = 1,315,772,460 yd. of yarn.

Total yards of yarn = 1,637,520,709.

The pounds received (43,603) divided into the total yards of filling used (1,637,520,709) equals the yards per pound (37,555). This figure represents 98% of the yarn consumed, since waste amounts to 2%. The actual yards per pound would therefore be 38,321.

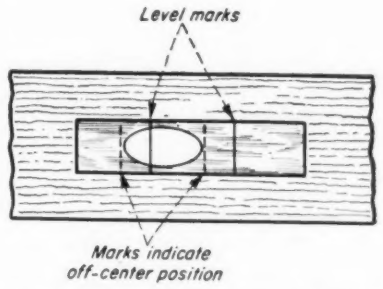
Our record is now complete; use of the yarn lot is considered satisfactory. *(K-1014)*

Mark Bead-Level Position To Speed Box Alignment

Fixers on S-5, S-6, and other high-speed looms can speed the job of testing multiple-shuttle box alignment by using a small level as shown in the accompanying sketch.

Obtain the correct pitch of alignment on one loom. If the required pitch follows the ¾-in. back rise and ⅝-in. front rise above the race, as recommended by Crompton & Knowles, make a thorough check and determine that the pitch is right. Next, place a small pocket level on top of the drop box near its center. The bubble will now be off center. Mark the new position and paint cross lines on the glass tube of the level to fix the new position. When tests are made on future adjustments, pitch the boxes according to the off-center marks.

Box pitch can be quickly determined in this manner. Place the level on the box to be checked, and test the box bottom or flooring with the



Shuttle-box alignment can be quickly checked with a bead level for pitch and a 6-in. rule for height. When one box is pitched properly, make permanent marks on the bead glass to indicate the location of the bead.

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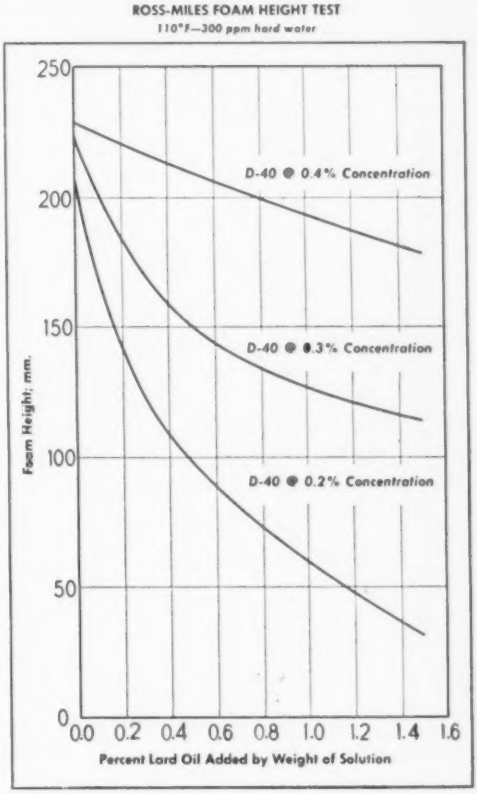

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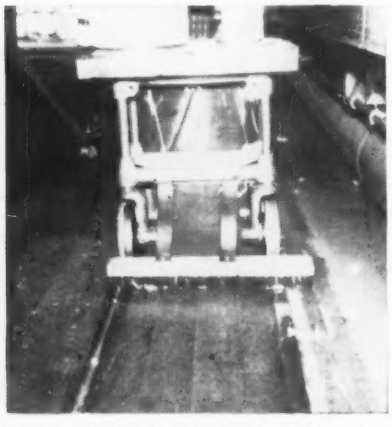
race level with a 6-in. rule. If the level is off, pitch the box to the desired position by the adjusting screws. Keep in mind that the box flooring and race alignment must be checked as the pitch is changed. *(K-966) H. E Wenrich, Berwick, Pa.*

Trident-Truck Track Kept Clean by Brush

The track on which the trident truck of the Barber-Colman spooler runs is usually at floor level, and operators work over the track. Yarn tailings and lint bunches drop on the track and interfere with the running of the truck.

We installed brushes on the fronts of our trident trucks to sweep the tracks clean just ahead of the trucks. Two flat-iron arms welded or bolted to the under side of the crosspiece above the wheels are used to hold the brush in place. The wooden back of the brush is bolted to the two arms. *(K-924)*



***Spooler trident-truck track** is kept clean by a brush attached to the front of the truck. Two flat-iron arms hold the brush in place.*

Employees' Work Tickets Kept in Locked Boxes

Supervisors in cotton mills realize what annoyance and loss of time and effort are due to lost work tickets. Losing a ticket sometimes sets back a department until the ticket is found and everything set right. There is particular irritation when the employee whose ticket is lost is a piece worker.

In many plants, work sheets have to be sent to the payroll department daily, irrespective of whether an employee is a piece or hour worker. In these plants, keeping the work tickets safe at all times is really important.

One plant had been troubled repeatedly because of lost tickets. Because tickets were missing, there was a difference in the employees' pay envelopes at times. This condition vexed the employees and required more careful tracing of the tickets. Sometimes the tickets were not found.

All this difficulty has been eliminated. The plant officials have provided small metal containers, similar to ballot boxes, for keeping the tickets safe. These boxes are locked when department executives receive them. They are slotted to permit an employee to deposit his work ticket as soon as it is made out.

A clerical worker early in the morning makes a round into each department, picks up the boxes, and delivers them to the office, where they are opened. When he collects the boxes, the clerical worker leaves another in the place of each one, so that there is a box in each department at all times. *(K-1015)*

Kirschner-Beater Teeth Should Have Gradual Grip

***A Kirschner beater** will not damage the fibers of the stock it is processing if the pins are arranged properly for tender stock. The carding action of the needles should begin in a fairly gentle manner and increase in depth toward the back of the lag.*

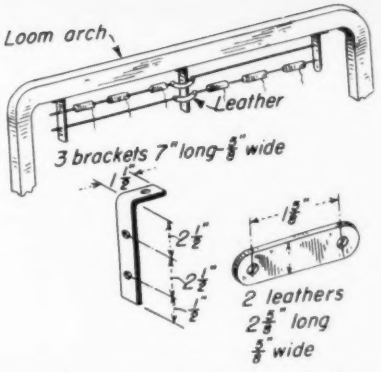
Arrange the pins so that the front pins are about half as long as the back pins, as shown here. The grip of the pins will be gradual and damage to the fibers less.

Decorative-Yarn Holders Used on Worsted Looms

We are operating Crompton & Knowles W-3 looms on fancy worsteds. We used to attach the decorative yarns needed for each loom to the loom arch with wire. There were two objections to the wire: (1) it was often in the weaver's way when he picked up warp ends, and (2) it was a potential accident hazard.

We now use rods mounted to the loom arch for holding the fancy ends.

Three cast-iron or steel brackets are used to hold the rods. They are formed at a 90° angle, as shown in the sketch. One end is 5½ in. long; the other is 1½ in. long. A bolt hole is drilled in the 1½ in. end. Holes for bolts



***Decorative yarns** for fancy worsteds are placed on these rods under the loom arch. The rods replaced wire formerly used.*

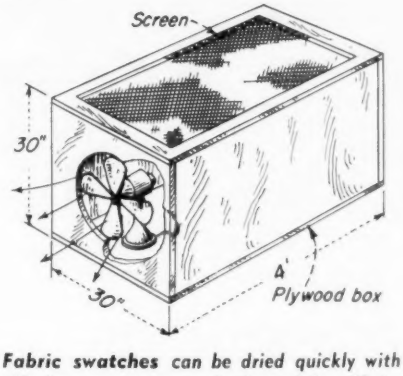
are also drilled and threaded in the under side of the loom arch.

Two holes for holding ¼-in. steel rods are drilled in the 5½-in. ends of the brackets. One rod (ours is ¼ x 60 in.) is inserted through the top hole in each end of the three brackets. Another rod is inserted through the bottom hole in each bracket. The brackets are then bolted to the arch.

The rods are kept from sliding sideways too far by leather stops riveted to the rods on each side of the middle bracket. The leather stops are 2⅝ in. long and ⅝ in. wide.

The tubes of decorative yarns are placed on the rods. *(K-976) Charlie Faille, Huntingdon, Quebec*

Wet Fabric Swatches Dried With Exhaust Fan



***Fabric swatches** can be dried quickly with this fan arrangement. A plywood box 30 in. square and 4 ft. long has an open top covered with screen wire. A small exhaust fan is placed in one end of the box.*

Swatches to be dried are laid flat on the screen. The fan is turned on, and air is drawn through the swatches. **(K-980)**

Surface of Take-Up Roll Renewed With Emery Cloth

When the friction surface of the wooden take-up roll on a spring-needle knitting machine becomes smooth, the surface must be roughened again so that the take-up action will remain

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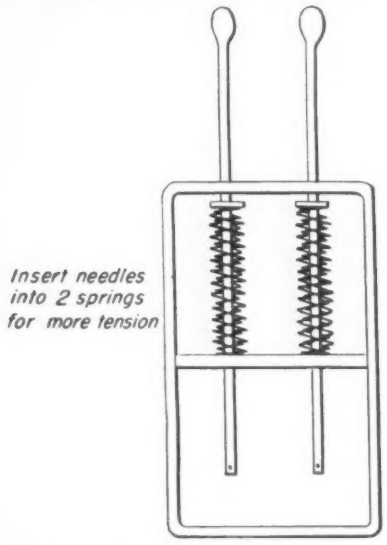
positive. The factory method of providing the rough surface is to paint the roll with an adhesive and imbed a certain type of grit in the adhesive. If this process is to be used on a worn roll, it is necessary to remove the roll from the machine. If no other defects are present in the roll, a repair that is easy, cheap, and effective can be accomplished on the machine.

The materials needed are to be found in almost any knitting room. All that is required are a few sheets of coarse-grain emery cloth and ordinary tacks. The emery cloth is drawn tight around the roll, as free of wrinkles as possible. A slight overlap is allowed to permit fastening with one row of tacks. Barring accident, this abrasive surface will last as long as the imbedded-grit surface. (K-949) Albert M. Young, Jr., Philadelphia, Pa.

Double Feeler Spring Increases Needle Tension

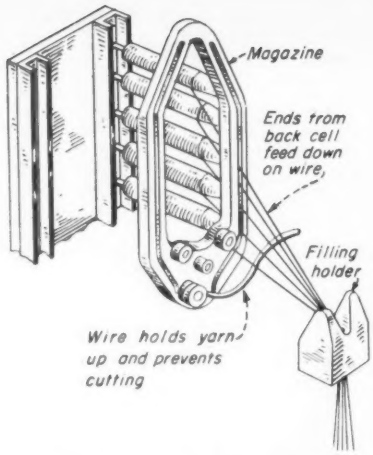


***Filling feelers** often need more spring tension to insure adequate contact with the empty quills. One way of increasing tension is to pull out the spring, making the coils longer. A better way is to press two springs together so that the coils mesh. Insert the feeler needle through both springs.* (K-982)

Cut and Chafed Filling Prevented by Wire Guard

Certain filling yarns are often cut or chafed by the loom lay. This damage is usually caused by the yarn hanging too low between the back cell of the rocking magazine and the pneumatic thread holder.

The thread holder is set to specified measurements. On some looms, the setting is 7½ in. from the magazine and 2 in. from the bottom box-cell plate. For most yarns, this setting usually prevents chafing and cutting by the lay; but we run some yarns that hang too low when they are released by the thread-holder suction.



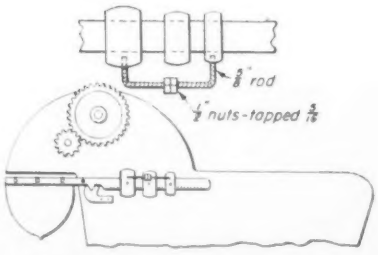
***Cut filling** that results when filling hangs too low between the magazine and thread holder can be prevented by the use of the wire shown here. The wire holds the filling clear of the lay.*

We have found that a short length of wire attached to the magazine so that it holds the yarn off the lay will prevent chafing and cutting.

The wire should be bent somewhat in the shape of the letter S, as shown in the sketch. At one end, make a small loop in the wire to serve as a bolt hole. Remove the center bolt in the magazine, insert the bolt through the loop in the wire, and replace the bolt in the magazine.

The wire should be bent so that it clears the box top about 1 in. Run the yarns from the magazine over the wire to the thread holder. (K-984) H. E. Wenrich, Berwick, Pa.

Feeder Weighing Pan Has Heavier Balance



***Heavier feeding** with a Cashiko feeder can be obtained by adding weight to the scale bar that balances the feed pan.*

Drill and tap a 5/16-in. hole in each of two weights on the scale bar. Bend and thread a 5/16x6-in. rod so that its ends can be screwed into the holes in the weights. Run two 1/2-in. nuts up on the rod, and screw the rod into the weigths.

This extra weight gives about 30 grains to play with. (K-830) Sullivan Gillette, Lowell, Mass.

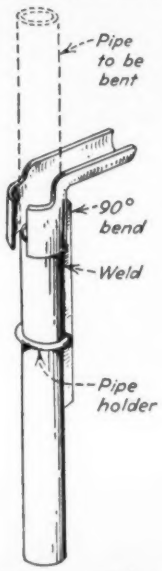
Fires in Picker Room Were Caused by Chokes

We recently traced several picker-room fires to chokes around the doffer shaft at the bottom of the overflow box of the cotton-distributing system. There was approximately 1-in. clearance on the shaft between the doffer head and the bearing housing. Cotton caught on the shaft and twisted tight around it. When the choke got big enough to create friction against the housing or the doffer head, fire started.

The doffer runs at 1,000 rpm. When the cotton packed tight, it didn't take long for fire to start; and after it started, it was only a matter of minutes before it was in the whole distributing system and often in all the pickers on that line.

We removed the fire hazard by moving the bearing housing to the outside of the box frame and bolting it there. We then had about 3 in. of clearance. Cotton still packs around the shaft, but between cleaning times it does not generate enough heat to cause a fire. (K-1012)

Angle Gage Is Useful In Bending Pipes or Rods



***Bending pipes or small rods** can be speeded up, when several must be bent to the same angle, by making a bending gage such as the one shown here. Insert the pipe or rod to be bent into the gage, and bend it until it lies against the angle end of the gage.* (K-941) Wm. H. Mullen, Quincy, Mass.

Abrasive Eraser Cleans Small Rust Spots

Cleaning small rust spots and scratches from reeds, lease rods, size rolls, etc., can usually be done with steel wool, Fiberglas, or other abrasive. An excellent tool for brightening these small parts is an eraser made of such abrasive material. (K-962)

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Anti-Static Compound Sprayed on Fibers

Merix anti-static No. 79, a new compound for reducing static electricity in textile fibers, has been developed by Merix Chemical Co., 1021 E. 55th St., Chicago 15, Ill. The compound is offered in an aqueous solution of neutral character and is readily miscible with other compounds. It is applied to fibers by spraying. Quantities are available in 32-oz., 1-gal., and 5-gal. cans.

Water Purified By Silica Sol

A new process for purification of raw water has been patented by Philadelphia Quartz Co., Public Ledger Bldg., Philadelphia 6, Pa.

The patent covers the Quartz Co. N-Sol-A Process of preparing activated silica sol which has been formed by reaction with ammonium sulphate or other salts of ammonia and dilute sodium silicate. This sol, used in conjunction with a coagulant such as alum or iron salts, produces rapid formation of large floc resulting in the removal of a greater percentage of impurities from the raw water.

General Announces Five New Dyes

Five new dyes for wool, cotton, and spun-rayon fabrics have been announced by General Dyestuff Corp., 435 Hudson St., New York 17, N. Y.

Chromoxane Brilliant Violet REA-CF is a homogeneous mordant dyestuff characterized by a degree of brilliancy claimed to be unusual among mordant dyes as well as by good to very good fastness to wet and mill processing. The dye can be applied by the top-chrome and monochrome (chromate) methods.

Chromoxane Brilliant Violet REA-CF is primarily recommended for brilliant violet shades, also for effects and for brightening navy-blue shades on piece goods, yarn slubbing, and raw stock.

Azo Phloxine GA Extra Conc. CF is a very level-dyeing acid dyestuff said to produce very bright bluish shades of red with good fastness to light.

In combination with Fast Light Yellow 3GX-CF and Alizarine Blue SAP-CF or other level-dyeing acid colors, the new dye is commonly used for dyeing mode shades as well as dark browns, olives, etc.

Wool Green BSNA Extra Conc. is an acid dye which produces fairly bright bluish-green shades on wool. The dye is recommended for use when an extremely level-dyeing, inexpensive product is desired with no special fastness requirements, particularly in combination shades and as a shading color.

Diazo Brilliant Scarlet GGA Extra CF is a new, homogeneous, diazo dyestuff. When applied to cotton, rayon, or other vegetable fibers and developed, it produces bright scarlet shades said to possess better wash fastness than obtainable with other diazo scarlets.

The composition of Diazo Brilliant Scarlet GGA Extra CF is sufficiently free from copper and manganese to be suitable for material to be rubberized. It is nondusting and is soluble at the rate of 2 oz. per gal.

Acetate-rayon effects are stained distinctly. Animal fiber and nylon are stained heavily. Dead cotton is well covered.

Katigen Yellow GA-CF is a sulphur dyestuff with good tinctorial value possessing fairly good light and wet fastness. The dye is used for dyeing cotton and rayon yarn, piece goods, or raw stock in all types of machinery. Its solubility of 12 oz. per gal. makes the product especially suitable for package dyeing.

Useful Accessories FOR TEXTILE MILLS

Drum Pump for Volatile Liquids

A self-priming drum pump for alcohols paint thinners, light oils, and other volatile liquids has been announced by General Scientific Equipment Co., 2700 West Huntingdon St., Philadelphia 32, Pa. Equipped with a positive shut-off valve for protection against vapor losses, the new pump has a capacity of 15 gal. per min. An automatic drain-back and a handy filling spout are also featured.

Invisible Water-Repellent Coating

A material which reduces water absorption in concrete and cement products and forms an invisible water-repellent coating on walls, floors, and similar surfaces is being investigated by the Chemical Dept. of General Electric Co., Pittsfield, Mass. The product, a silicone derivative, is a new grade of "Dri-Film" and can be applied by either spraying or brushing.

Reversing Superstructure for Diaphragm Valves

A new reversing superstructure for diaphragm regulating valves has been introduced by Leslie Co., 187 Delafield Ave., Lyndhurst, N. J. The superstructure permits reversing of the valve action by substitution for the standard superstructure. The valve body need not be removed from the line, the maker states. Relatively high-pressure drops with good throttling control are also featured.

Electrical Outlet Box Guard

"Plasterguard," a device to prevent plaster from getting into and hardening in screw holes and boxes, is now being produced by O. Z. Electrical Mfg. Co., 262 Bond St., Brooklyn 2, N. Y. Normally used in square outlet boxes, the inexpensive item eliminates the necessity of an electrician scraping and cleaning boxes before final installation. In cases where plasterers are accustomed to facing completely over the box the unit shows a brown spot on the wall, thereby making exact location easy.

Circular Stencil Attachment

An attachment which enables circular stencils to be cut on conventional straight-line machines has been announced by Diagraph-Bradley Industries, Inc., 3745 Forest Park Blvd., St. Louis 8, Mo. The attachment is available on 1¾-, 1½-, 1¼-, ⅞- and ½-in., housed-model, stencil-cutting machines. Conversion is accomplished in a few moments, and circular stencils up to 21-in. diameter can be cut.

Small Filter Unit

A small filter unit especially adapted for either periodic or continuous filtration has been developed by Sethco, 105 150th St., Jamaica 4, N. Y. Constructed of stainless steel throughout, the pump units are suitable for filtering xanthate and many other industrial solutions. The 110-v. motor operates on a.c. or d.c., and the entire unit weighs only 30 lb. The optimum rate is 100 gal. per hr. although rates as high as 250 gal. per hr. are said to be possible.

Liquid Germicide-Disinfectant

A quarternary-ammonium-type liquid germicide-disinfectant designed for all-purpose sanitizing and for control of mold, algae, and slime has recently been announced by Oakite Products, Inc., 142 Thames St., New York 6, N. Y. Called Oakite Sanitizer No. 1, the product is stable, non-corrosive, non-toxic, and penetrates readily. It is said to be particularly effective in controlling slime and algae in textile-mill humidifying equipment.

NEW HIGH-SPEED BLEACHING BOX FEATURES:

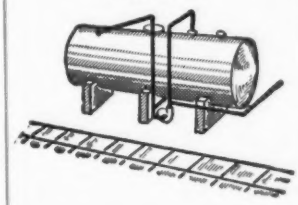
1. Higher bleaching speeds —limited only by washer capacity.

2. Improved piling mechanism—positive pulling draw reels remove cloth faster than previous designs.

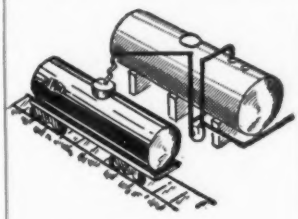
3. Increased capacity—more cloth can be handled without increase in the size of the equipment.

4. Reduction in floor space requirements—overall length of J-Box has been reduced by 25% or more.

FOR GREATEST ECONOMY, CONSIDER:



TANK STORAGE AT THE MILL



TANK CAR DELIVERIES

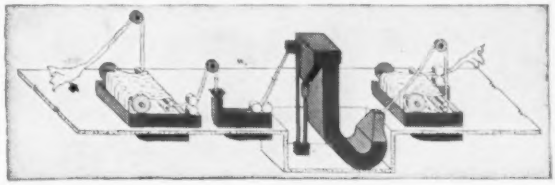
If you need 5000 lbs. or more "Albone" 35 Hydrogen Peroxide per month, you'll find a storage tank installation to be economical.

SEND FOR THIS NEW BOOK!

It shows typical continuous bleach layouts designed to fit the requirements of various plants. For a copy just write: E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Del.

CHOOSE ONE OF THESE 4 DU PONT CONTINUOUS PEROXIDE BLEACHING SYSTEMS

to bleach MORE goods FASTER, at low cost

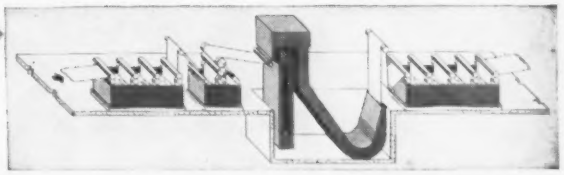


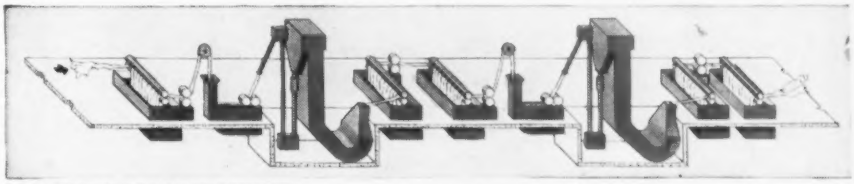
ONE-STAGE ROPE SYSTEM

An ideal arrangement for mills that require weekly production of 200-500 thousand yards of goods averaging 3 yards/pound or lighter.

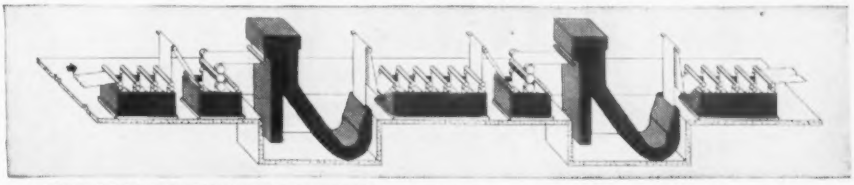
ONE-STAGE OPEN-WIDTH SYSTEM

For production requirements of 150-300 thousands yards/week of goods that cannot be rope-processed—especially successful with a wide range of heavy fabrics.





TWO-STAGE ROPE SYSTEM For processing a wide variety of fabrics; print cloths, sheetings, shirting, shade cloth, etc.: handles 1¼—1½ million yards/week of 4-yards goods.



TWO-STAGE OPEN-WIDTH SYSTEM For cloth that cannot be handled in rope form. Operating speed generally between 75 and 125 yards/minute. Any degree of bleaching obtained by adjusting peroxide strength.

• • •

TO PRODUCE quality bleaching at lower over-all cost, look into these *Du Pont* systems. They're readily adaptable to speedy, uniform processing. In use in many leading mills, Du Pont Continuous Peroxide Bleaching systems are easy to set up, operate and control . . . and they're backed by the years of experience and "know how" of Du Pont Technical Service.

Send for Du Pont's booklet that shows typical continuous bleaching layouts designed to fit the requirements of various plants. For your copy, write:

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department
Wilmington 98, Delaware

DU PONT CONTINUOUS PEROXIDE BLEACHING

DU PONT

BETTER THINGS FOR BETTER LIVING . . . .*THROUGH CHEMISTRY*

Questions and Answers

Uneven Bobbin Yardages May Cause Down Time

Technical Editor:

In a recent article [Cone-Winding Task Easily Computed From Data, T.W., May, '48], a method of job assignment on cone winders was discussed. There is one point in connection with the article that needs clearing up.

Time required to place and tie in bobbins was figured as about 12.47 min. per hr. per spindle. This amounts to about 226 supply bobbins to be placed and tied per hour on a four-spindle assignment. The ratio between down time for tying in and total running time of the four spindles is obtained by subtracting total down time from total available time and figuring the ratio. This calculation is:

(60. min per hr. $\times$ 4 spindles — (12.47 min. $\times$ 4 spindles) = 240 — 49.88 = 190.12 min.

The ratio between 190.12 and 49.88 is about 4 to 1.

With such a low ratio, there undoubtedly will be a certain amount of overlapping of the two factors. In other words, the bobbins will not always run out in order, and there will be more than one spindle stopped at certain times.

Should not such overlapping be provided for? (9271)

You are correct in stating that the ratio between spindle down time and running time is approximately 4 to 1. If all the elements of the job that cause down time are considered, the ratio drops to 3.88 to 1 (the task from which standard production of 1-run wool is computed).

Of course, if more than 3.88 spindles are assigned as a task and the operator does not exceed normal performance, there will be more than one spindle down at any given moment. However, since standard production is figured from 3.88 spindles, an operator with four spindles should be able to meet the standard production rate without further allowance.

If overlapping of down time occurs on a standard task, it is undoubtedly caused by variations in the lengths of yarn on the supply bobbins. If these variations are so bad that the operator cannot maintain an even work cycle, the overlapping down time must be

MONEY FLOWS, SHUTTLES FLY

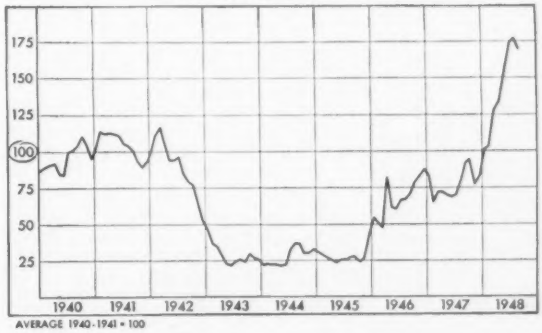
– you get your cloth!

When the United States went to war in 1941, the Chase National Bank had on its books textile loans running to many millions of dollars. In the following years these loans were paid down to about a fifth of their former total as the industry went to work to meet both Government and civilian needs.

Now Chase textile loans have again risen sharply as plants have been expanded and war-worn and obsolete machinery replaced during a period of higher costs.

In meeting the fluctuating demand for credit, versatile Chase service has helped to push the raw textile fibers over the long road which ends in a new suit, skirt, or handkerchief for you.

CHASE TEXTILE LOAN INDEX



AVERAGE 1940-1941 = 100

Chase finances the every-day things you use

THE CHASE NATIONAL BANK

OF THE CITY OF NEW YORK

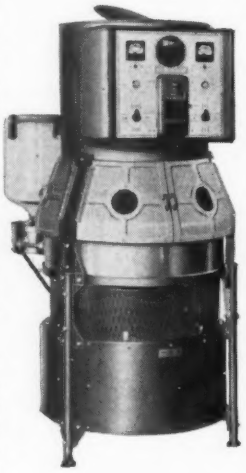
Member Federal Deposit Insurance Corporation

Photo courtesy Morton Bregman of The Chicago Fashion Industries

Fine fabrics ... are Atlas-Ometer tested ....

Fading, dimensional changes and loss in tensile strength due to sunlight, washing, dry cleaning and outdoor exposure are predetermined in the laboratory enabling the textile chemist and colorist to guarantee the permanence of the fine textured beautiful fabrics available today.

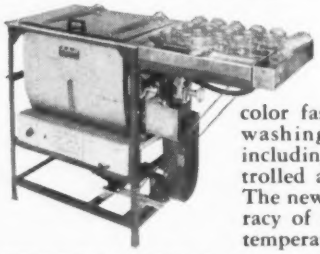
ATLAS FADE-OMETER



The recognized standard testing machine for determining the fastness to light of dyestuffs and dyed fabrics. Specimens are rotated around the Atlas Enclosed Violet Carbon Arc — the closest approach to natural sunlight — in masked holders. Temperatures automatically controlled to within ±3° F. and humidity regulated by a constant water level according to requirements of the test. Operation is completely automatic without attention from operator; can be left in continuous operation overnight.

NEW SPECIMEN SUSPENSION—Atlas has recently introduced a method of specimen suspension in the Fade-Ometer designed to increase the accuracy of tests. New type specimen holders are engaged by a new lower ring, in addition to the standard upper ring. This assures vertical alignment of all holders and equal distribution of heat and light energy for all samples.

This new holder for specimens can be used with all Model FDA and FDA-R Fade-Ometers now in operation. Holders are available in baked-on gray enamel or, at slight additional cost, dull finish stainless steel.



ATLAS LAUNDER-OMETER

The standard laboratory washing machine of A.A.T.C.C. for testing color fastness, staining, shrinking, resistance to washing and mechanical action. All factors including washing action can be carefully controlled and reproduced identically at any time. The new preheating loading table increases accuracy of tests by starting all samples at uniform temperature.

RESEARCH MODELS—Two new models for research testing have recently been added to the Atlas line of standard Launder-Ometers. These units are designed to accommodate larger samples, allowing more accurate shrinkage testing, and are available with capacities ranging from 20 pint to 6 half-gallon jars. Both machines may be supplied with vari-speed drive units for operation between 10 and 50 r. p. m.

Manufacturers of the Twin Arc and the X1A WEATHER-OMETERS

ATLAS ELECTRIC DEVICES CO.

361 WEST SUPERIOR STREET, CHICAGO 10, ILL.

Originators and manufacturers of accelerated testing devices for over a quarter of a century.

Questions and Answers

(Continued)

determined and suitable allowance made. Efforts should be made, of course, to correct the fault rather than to allow for it.

The important point is that the task be set so that at no time will it be necessary for the operator to wait for a supply bobbin to run out. If the operator does have to wait, her earning potential is limited, which is not in accordance with sound wage-incentive policy.

Printing Terry Cloth Done With Rotary Machine

Technical Editor:

Is it practicable to print terry cloth? (9272)

Terry cloth can be printed, but the definition of the printed pattern is almost proportional to the roughness of the surface of the material being printed. Thus, the printed pattern on terry cloth could not be sharply defined, and it would be well to stay away from patterns containing fine lines.

If the engraving is made sufficiently deep, enough color can be carried by the print rolls to penetrate fairly well the pile of the cloth. If this pile is laid down by pressure during the interval that the material is being squeezed between the print roll and the impression cylinder, subsequent steaming, washing, and finishing will raise the pile again.

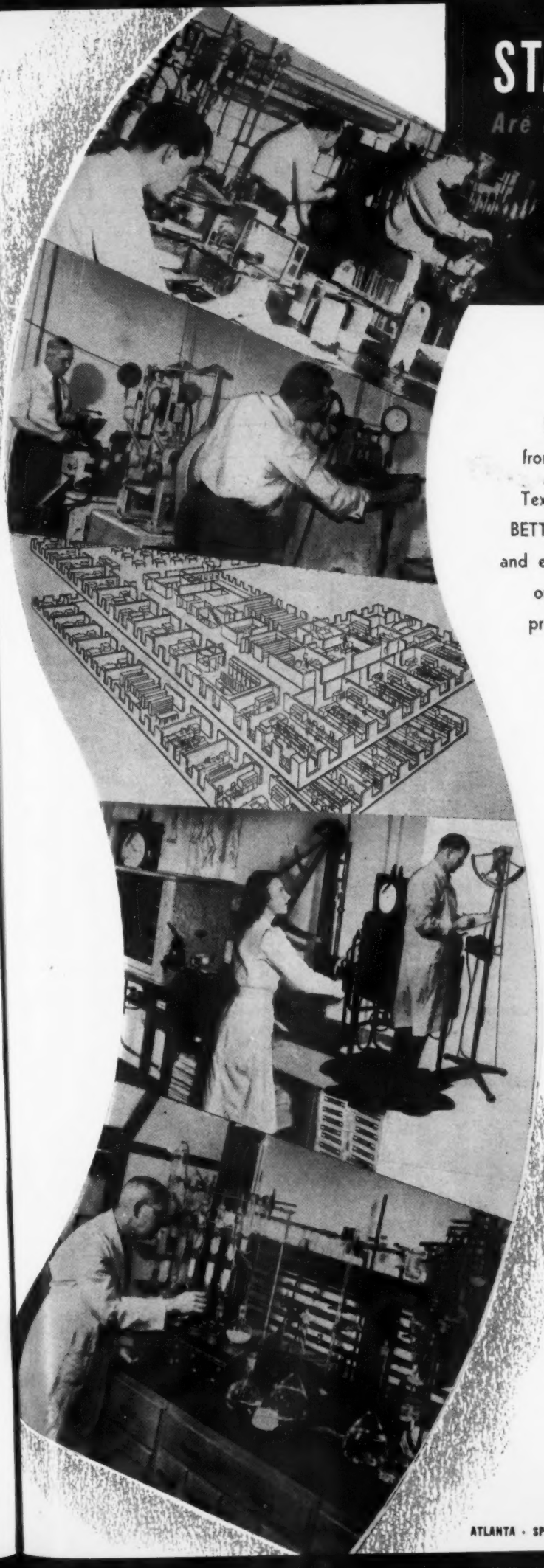
Proper selection of patterns can yield some very attractive results. Of course, the rotary intaglio printing machine commonly used in the textile industry must be used. Other types of printing, such as surface printing, would not apply sufficient color to penetrate the pile.

Stainless-Steel Dye Tube Gives Good Dyeing Results

Technical Editor:

We are interested in dyeing yarn on perforated stainless-steel cones (or any other metal). Has this been successful? Can the yarn be dyed evenly? We are getting some of our yarn dyed on perforated laminated paper tubes (1⅝ in. in diameter), but these tubes do not last long. Would you suggest using stainless steel instead? (9274)

Very few stainless-steel cones are employed in this country for dyeing yarn, though they have been used to a pretty wide extent in some foreign countries. Depending on the size of the package and the type of dye, it is possible to use them; but generally speaking, the resulting dyeing is apt to be quite streaky. While this condition may not



STALEY'S LABORATORIES

Are Important in Making Better Starches

STALEY'S STARCHES

Are Important in Weaving Better Fabrics

From Staley's laboratories come BETTER Starches . . . and from Staley's Starches come Better Weaving, Better Fabrics.

Textile men prefer Staley Starches because they are sure of BETTER, more consistent, dependable performance from each and every shipment. Staley Starches are under strict laboratory control during each step of processing from raw product to finished starch. Tested and re-tested to make sure these starches meet exacting requirements for use right in your own mills. Result . . . the proper starch for any sizing formula.

We invite you to call on us when you encounter sizing formula problems. Qualified laboratory technicians will assist you in every way — and of course, without obligation.

Photographs of Staley's Laboratories used in the 1948 series of trade paper advertisements.

Staley's
CORN AND SOY BEAN PRODUCTS

INDUSTRIAL SALES DIV.

A. E. STALEY MFG. CO.

DECATUR, ILL.

ATLANTA · SPARTANBURG · DALLAS · PHILADELPHIA · CHICAGO · NEW YORK · BOSTON · SAN FRANCISCO

This beats a magic carpet!

Air Express can bring you supplies and equipment from any U.S. point—*overnight*. And that's better than old-style magic! Air Express is the fastest way you can find to ship or receive. No delays, because shipments go on every flight of the Scheduled Airlines.

What's more you get special door-to-door service at no extra cost. With low Air Express rates, you can use this fastest service as a regular procedure. Let Air Express keep your business running fast—and smoothly.

Specify Air Express—World's Fastest Shipping Service

- Low rates—special pick-up and delivery in principal U.S. towns and cities at no extra cost.
- Moves on all flights of all Scheduled Airlines.
- Air-rail between 22,000 off-airline offices.

True case history: Rubber equipment users regularly get replacement parts by Air Express so machines won't stand idle. Recent shipment: 102-lb. carton picked up 5 P.M. the 18th in Noblesville, Ind. Air-rail to Dallas, delivered 9 A.M. following day. 799 miles, total cost only $26.78. Any distance inexpensive, too. Phone local Air Express Division, Railway Express Agency, for fast shipping action.

AIR EXPRESS
AIR EXPRESS GETS THERE FIRST

Rates include pick-up and delivery door to door in all principal towns and cities

AIR EXPRESS, A SERVICE OF RAILWAY EXPRESS AGENCY AND THE
SCHEDULED AIRLINES OF THE U.S.

Questions and Answers

(Continued)

show up too badly for the end uses of some yarns, most yarn probably can be dyed better on stainless-steel parallel tubes. Most people who have attempted to use the perforated stainless-steel cones have gone back to parallel tubes. Yarn dyed on such tubes is much more uniform; and the entire dyeing result is considerably better, irrespective of the type of dye employed.

Undoubtedly you should use $1\frac{3}{8}$-in. stainless-steel perforated dye tubes instead of the treated paper tubes you are now using. You will find that the stainless-steel tube, though initially higher in price, will prove more satisfactory when you consider the relatively short life of the paper tube.

Uneven Woolen Roving May Have Several Causes

Technical Editor:

We are running a blend of 40s wool and garnetted wool stock and are having trouble with some of the ends running light. Can you advise us how to correct this condition? (9273)

Finding the cause of the light ends is a matter of checking the various parts of the card and correcting any fault you find. All settings must be correct.

Cylinders, doffers, workers, strippers, and fancies must run as nearly true as possible. If necessary, give them a light grinding. Check the weighing mechanism; see that the distribution of stock in the weighing pan is even across the width of the pan.

Check the performance of the push-board on the feed table. There should be no break in the continuous flow of stock from one dropping of stock to the next, and new droppings should not fall before the old ones are out of the way. Bad carding, and sometimes uneven roving, will be caused if too much clothing wire is broken out. This point should be checked.

Watch the fancy to see that it is clean and clear of stock. If stock is winding around the fancy, uneven roving will result. Also check the amount of waste under the card to make certain that excessive droppings do not affect roving weight.

If the card has a tape condenser, look at the tapes and see that they are not slack, too tight, or badly worn. For heavy roving, a support roll between the doffer comb and the division roll should be used. Other points to watch in connection with the condensers are: stretching the web before it enters the condenser, amount of fly,

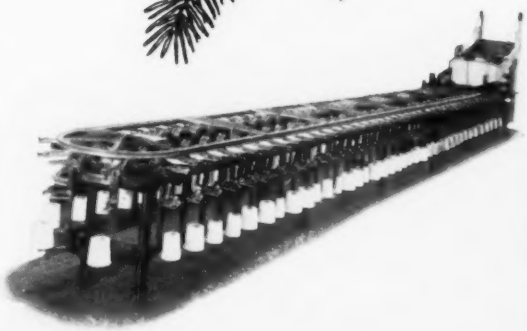
A Merry Christmas and a Prosperous New Year!

To Mill Owners and Managers everywhere, we wish a Happy Holiday Season, and the *Best* of all New Years

For an auspicious start to your next year's plans, we suggest that you carefully investigate the cost-cutting, labor-saving advantages of Abbott Winders and Quillers. You'll find they provide a demonstrable method of increasing profits by lowering production costs and bettering your competitive position.

Our own plans call for the manufacture of the most efficient Abbott Machines ever made. We pledge our increasing efforts to improve mill operations by producing the most *advanced* machines at the *lowest* cost.

Sincerely
E. J. ABBOTT, *President*



ABBOTT MACHINE COMPANY
FACTORY AND MAIN OFFICE:
WILTON, NEW HAMPSHIRE
SOUTHERN OFFICE: GREENVILLE, SOUTH CAROLINA

STOP COLOR BLEEDING

with *CULOFIX

Preserve crisp detail and contrast of prints by using time-tested Culofix as an after treatment.

Kill bleeding troubles no matter where they occur—in the finishing bath—batching up after dyeing—in cross dyeing, etc.

Improve water fastness of direct colors and impart a very desirable soft, full finish at the same time, thus eliminating an extra finishing operation. (Where no softening action is needed, Culofix L should be used.)

If fastness to water or prevention of color migration is essential to your direct color dyeings, write for Technical Service Bulletin #204-106.1. Our technical staff is at your service without obligation.

*REG. U.S. PAT. OFF.

Arkansas Co. INC.

Manufacturers of Industrial Chemicals for Over 40 Years

NEWARK, NEW JERSEY

MANUFACTURERS' BULLETINS

A REVIEW of the month's outstanding trade literature. Items are listed one month only—no repeats.

Free FOR THE ASKING

1. Automatic quillers to produce wound filling at the lowest cost per pound are described in a pamphlet published by Abbott Machine Co. Details of construction and operation are pictorially reviewed.

2. Steam-heated drying cylinders can be made more efficient by proper application of suction drying, according to a Sarco Co., Inc. bulletin. Typical causes of drying inefficiency are discussed in simple language.

3. Multi-stage steam turbines for driving pumps, fans, compressors, and generators are pictured and described in a recent Worthington Pump & Machinery Corp. folder. Seven basic designs are outlined and typical installations are shown.

4. A twist-setter with no moving parts is the subject of a bulletin issued by Seydel-Woolley & Co. Specifications and advantages are listed.

5. For users of Wilcox & Gibbs Lockstitch machines, there is a new instruction book and parts list, Form 907.

6. An 18-page illustrated booklet describing briefly the wide range of products manufactured by the Chemical Dept. of General Electric Co. has just been issued. The publication includes industrial applications of various plastics, resins, and metal compounds.

7. New exhibition rooms of the H & B American Machine Co. are pictured in a recent folder. The pilot mill has been completely renovated.

8. The automatic recirculating cloth dryer is the subject of a folder prepared by Industrial Heat Engineering Co. A sketch of its construction is interesting.

9. Technique of measuring liquid level in vessels under presure is detailed in an article in *Instrumentation*, a Brown Instrument Co. publication. Another feature deals with automatic control in package dyeing.

10. You don't take chances when you select equipment of proven performance, according to an H. Brinton Co. folder. An improved underwear machine is described in detail.

11. A variable-speed drive control and brake for dressing frames are described in a bulletin issued by Sjostrom Machine Co. Elimination of overhead shafting is listed among several claimed advantages.

12. Physical properties and construction specifications of a new insulating roof tile are described in an 8-page booklet prepared by American Structural Products Co. Tables on insulating value, strength, weight, and dimensional stability are included.

13. Ultrasols for higher coating speeds and increased markets in the resin-coating field are discussed in detail in a Monsanto Chemical Co. bulletin. Technical aspects, preparation, and application are also discussed.

14. Ball-bearing rollers for picker calender racks are always clean and turn freely, according to an Aldrich Machine Works bulletin. A cut section shows details of construction.

15. The manufacture of TEC yarn is completely described with pictures and charts in an article which appeared in a recent issue of *Esso Oilways*. Another article features storage and handling of lubricants.

16. A drop-box picker made of Tex-hide is described in a leaflet released by Gates Rubber Co. The data includes a comparison with rawhide pickers.

17. Dyeing monofilament hose by the tannic-acid method is the subject of a bulletin for inclusion in the DuPont Nylon Technical Service series. A complete routine is given.

18. Mechanical flow meters are described and illustrated in detail with photographs, diagrams, and data on dimensions and capacities in a new 12-page bulletin issued by Hagan Corp.

19. Information on the Surco process of controlled moisture application to yarn on warp or section beams, creels, etc. is available from Kearny Mfg. Co., Inc.

20. Fabric or paper labels from rolls of blank material can now be made in two colors, according to a folder prepared by Markem Machine Co. Details of the Model 126 machine are given and samples are illustrated.

21. Rubber mats and matting for factories, offices, stores, homes, and institutions are listed in a catalog prepared by B. F. Goodrich Co. Platform mats, runners, door mats, and many others are described.

22. Rotary dyeing machines for hosiery are shown in a catalog issued by Smith, Drum & Co. There is a picture of each type available along with data on design and construction.

MILL EXECUTIVES may secure copies of literature reviewed on these pages by using the post cards below. Fill out COMPLETELY one coupon for each piece wanted.

Instructions for use of post cards on other side

Write in box the number of item describing one catalog wanted.
Coupon void if not filled out completely

Name of my Mill .....
Street .....
City ..... State .....
My Name .....
Title .....

Good until April, 1949
TEXTILE WORLD, New York, N. Y. (Dec., 1948)

Write in box the number of item describing one catalog wanted.
Coupon void if not filled out completely

Name of my Mill .....
Street .....
City ..... State .....
My Name .....
Title .....

Good until April, 1949
TEXTILE WORLD, New York, N. Y. (Dec., 1948)

Write in box the number of item describing one catalog wanted.
Coupon void if not filled out completely

Name of my Mill .....
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Street .....
City ..... State .....
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Good until April, 1949
TEXTILE WORLD, New York, N. Y. (Dec., 1948)

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TEXTILE WORLD

330 WEST 42nd STREET

NEW YORK 18, N. Y.

McGraw-Hill Publishing Co., Inc.

23. The Little-Uster warp tying machine is described in detail in a folder published by Zellweger, Ltd. Ease of transportation and adaptability to any type of loom are listed with the advantages claimed in the folder.

24. Belting for power transmission, conveyors, and other applications are the subject of a comprehensive folder issued by Hewitt-Robins, Inc. A page on maintenance suggestions should prove helpful.

25. Automatic cleaning and overhead handling for textile mills are discussed in a bulletin prepared by American Monorail Co.

26. A piece-end sewing machine which will sew any fabric, any thickness, wet or dry, free from puckering is described in a circular prepared by Birch Bros., Inc.

27. The applications, basic units, controls, and service of Reeves speed control are presented in a folder prepared by Reeves Pulley Co.

28. "Studies of Nylon Dyeing; the Effect of Dyeing Procedures" is the title of a Calco Chemical technical bulletin. The article is excellently presented and includes many valuable exhaustion charts.

29. Does lint clog your motors? You will be interested in a folder describing Westinghouse lint-free textile motor. More production and lower maintenance cost are listed as advantages of the new design.

30. Horsepower cuts man power. The power-driven roof scraper described in a recent folder from G. H. Tennant Co. is said to make child's play of a previously back-breaking task.

31. "Cloth Room Practices", a bulletin which discusses practically all phases of cloth-room practice in an excellent manner, has been made available by Curtis & Marble Machine Co. The bulletin contains many practical and helpful hints.

32. A product index of categories such as metal-working, textile processing, lubricants, leather oils and greases, and hydraulic and transmission products has been prepared by E. F. Houghton & Co. Products are listed by trade name and individual applications.

33. Combinations of cork and Neoprene possess interesting properties which are revealed in a recent issue of the DuPont Neoprene notebook.

34. A catalog of textile-mill brushes has been prepared by United Shoe Machinery Corp. More than 35 types of brushes are listed along with specifications and illustrations of each.

35. A 50% greater production in the same floor space with the newly improved RMP machine is claimed by H. Brinton Co. in a folder recently released. Details of a completely new design are featured in the publication.

36. Zeo-Karb water softeners and dealkalizers are described in a bulletin prepared by The Permutit Co. Analyses of boiler feedwater treatments and other industrial applications are included.

37. For women's hosiery and for men's and children's socks, the answer to your problems in finishing will be given by a catalog prepared by Proctor & Schwartz dealing with its automatic boarding machine.

38. Metered lubrication of textile machinery is described in a bulletin issued by Bijur Lubricating Corp. Applications to several textile processes are outlined.

39. An illustrated parts catalog on the Jackson automatic self-cleaning atomizer has been published by Industrial Cooling & Moistening Co., Inc.

40. Onyx resins and Xyno resin dispersions and solutions as they apply to textiles are discussed in an Onyx Oil & Chemical Co. folder. A table of properties of these resins is given on the back cover.

41. A complete record of viscosity can be obtained with the viscometer described in a pamphlet published by Norcross Corp. Maximum sizing uniformity is also said to be attainable.

42. A pocket guide to arc-welding electrodes has been prepared by Air Reduction Sales Co. The thumb-indexed guide gives complete descriptions, recommended application and welding procedure.

43. Crepe tension for the No. 90 winding machine is discussed in *Twists and Winds*, a Universal Winding Co. publication. There is also an article on improvments on the No. 45 machine.

44. Dyeing any silk? Bernard Color & Chemical Corp. has issued a new color card for weighted and pure silk. The dyes are said to be prepared specifically for textile printing.

45. A 30-page illustrated bulletin describing in detail G-E silicone products has been issued by the Resin & Insulation Materials Div. of General Electric. Charts and tables are included for handy reference.

46. The use of Vatrolite in indigo dyeing is the subject of an article in a recent issue of the Royce Chemical Co. *Reporter*. Open-kettle routines are given.

47. Do you know what "metallizing" is? Read in a Metallizing Engineering Co. folder how you can whip waste by utilizing this process.

48. The Webcell continuous dialyser, a laboratory model for scientific research, is described in a bulletin published by Brosites Machine Co.

49. A direct-fired unit heater which delivers 550,000 B.t.u.'s of draftless heated air per hour is described in a bulletin issued by Prat-Daniel Corp. Details of summer cooling with the unit are included.

TO GET MORE INFORMATION

1. Fill out completely *one space* (name, title, company, address, and item number) *for each* bulletin wanted. Put only one number in each square.

2. Use only bottom card if ordering one to four pieces, both cards if ordering five to eight.

3. Detach, add postage, and mail.

Write in box the number of item describing one catalog wanted. **14**

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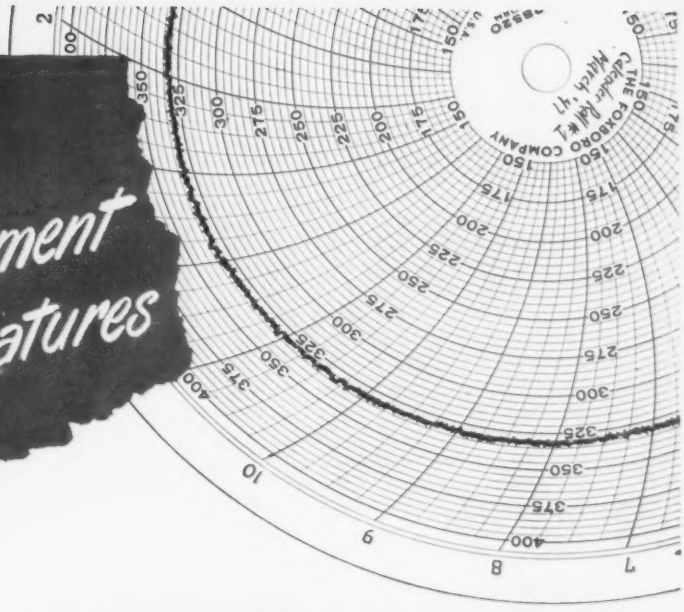


Now! Continuous Measurement of Roll Surface Temperatures

A UNIQUE, NEW FOXBORO SYSTEM

AN ENTIRELY NEW type of measuring head coupled with the sensitive, instantly-responding Dynalog Electronic Recorder solves a tricky problem of long standing. This combination has proven far more accurate—and convenient—in the continuous measurement of roll surface temperature than previous devices.

The Foxboro measuring element is very rugged, yet it bears so lightly (only 0.75 gm per sq. cm.) that it avoids any tendency to mark or score the roll. Errors due to friction, radiation, and convection, so common to conventional roll surface temperature bulbs, are completely avoided. Errors and inconveniences arising from use of hand-held surface pyrometers are eliminated. Recorder may be located up to 1000 feet away, connected with electric cable.

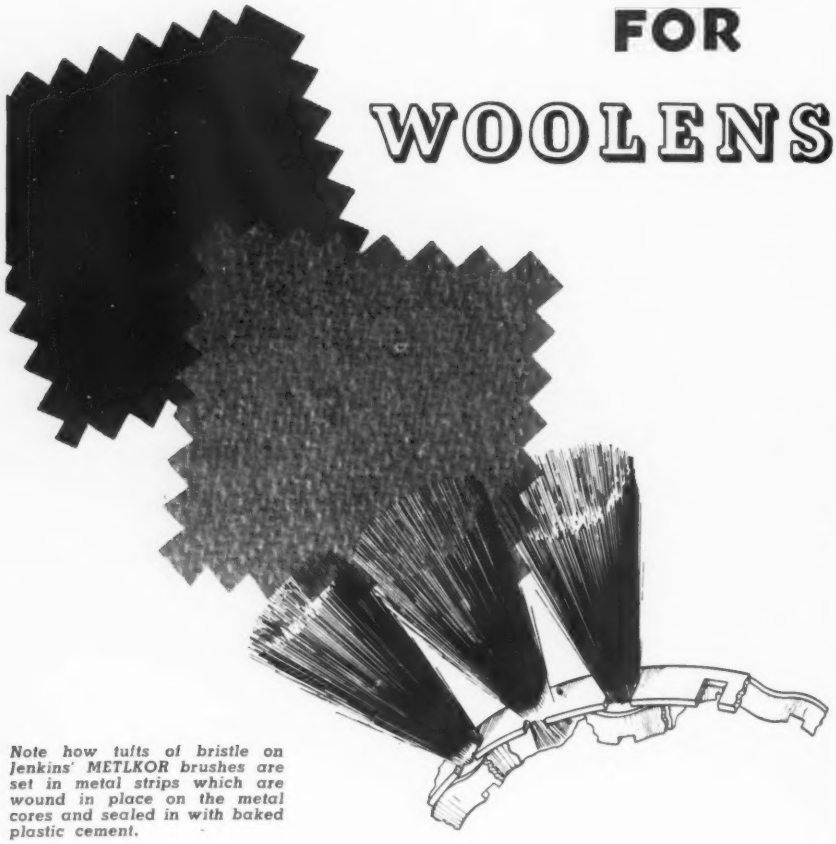
Using either a Dynalog Recorder or Controller, this is the system to install wherever closer, continuous measurement or control of roll surface temperatures means a saving in steam, a reduction in waste, a more uniform product. Get complete details—Bulletin 405. **The Foxboro Company, 84 Neponset Avenue, Foxboro, Mass., U. S. A.**

Foxboro Dynalog Controller at far right. Installation photo shows New Sensitive Element—basically, a miniature resistance bulb having highest sustained accuracy of any temperature measuring element within its range. Accuracy of readings is protected by complete isolation of element from ambient and radiant temperature effects. High speed response to roll surface temperature changes. Operating range: −40°F. to +350°F. or higher under special conditions.

FOXBORO
REG. U. S. PAT. OFF.

RECORDING · CONTROLLING · INDICATING
INSTRUMENTS

JENKINS' METLKOR BRUSHES FOR WOOLENS



Note how tufts of bristle on Jenkins' METLKOR brushes are set in metal strips which are wound in place on the metal cores and sealed in with baked plastic cement.

METLKOR cylinder brushes, have metal cores; cannot warp, sag, split, or get out of alignment. Easy to clean, because there are no places for dirt or dust to lodge. Not affected by acids or alkalis that may be used in processing. Jenkins' METLKOR brushes give 3 to 5 times the active life of cheaper brushes.

Another important feature of METLKOR brushes is that they can be refilled when worn. METLKORS can be bristled with any material including nylon.

USED BY EFFICIENT MILLS FOR—

Flock, raising, laying carding, combing, singeing, pressing, scouring, teasel cleaning, teaseling, wet brushing, polishing, and steam brushing.

Types and sizes for every use in textile processing.

Write today for illustrated catalog showing the complete line of Jenkins' brushes for the textile industry.

M. W. JENKINS' SONS, INC.

Manufacturers of Industrial Brushes Since 1877

CEDAR GROVE, ESSEX COUNTY, NEW JERSEY

Questions and Answers

(Continued)

and some tapes stealing stock from other tapes.

If the card is a ring-doffer card, it may be of help to take out the doffers and give them a light grinding and then a good brushing with a hand card covered with wool. You may find that the waste ring is a trifle higher than the others. If your side ends are consistently light, move the waste ring out $\frac{1}{8}$ or $\frac{1}{16}$ in. so that the ring next to it on the doffer will deliver a heavier roving.

Of course, other details may affect roving weight. The emulsion, for example, must be distributed evenly on the stock. It is a good practice to let the stock condition 18 to 24 hr. after the emulsion is applied so that the emulsion has time to penetrate the blend. However, leaving the blend to condition too long will result in the stock drying out, and uneven roving will be made.

The construction of the blend itself is important. If the garnetted stock is too fine for the coarse 40s wool or is too short for the length of the 40s, it will be quite difficult to process the blend into even roving.

Slasher Drying Efficiency Seldom Reaches 80%

Technical Editor:

We are interested in the use of infrared lamps in order to speed up our drying, conditioning, ageing, and curing operations.

At present, we are weaving narrow ribbons from warps carried on beams approximately 4 in. between flanges and 6 to 8 in. in diameter. We use 75 to 300-den. viscose rayon.

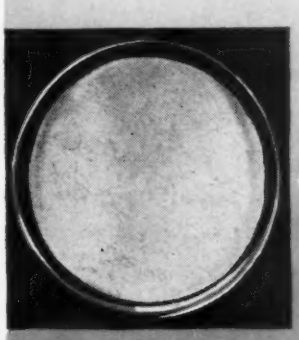
The warp yarn is run from a cone creel to a collecting head, through a size bath, to a steam-heated cylinder approximately 9 ft. in circumference. The cylinder has an effective face width of 18 in. Slashing is done at a speed of 30 yd. per min. A warp of 75 ends of 150 den. yarn occupies about 8 in. on the face of the cylinder.

We are now using a few 250-watt infrared bulbs in conjunction with the steam cylinder. In order to eliminate the steam-heated cylinder and use only infrared lamps, what total lamp wattage would be needed? (9245)

Mill experience with drying by means of infrared lamps indicates that the cost of drying by this method is approximately five times as great as the cost of drying with steam cylinders. In many cases, installations of lamps on slashers, shrinkers, etc. have been taken out and means for heating by oil or gas flames installed.

The wattage required for a drying job can be estimated only when the

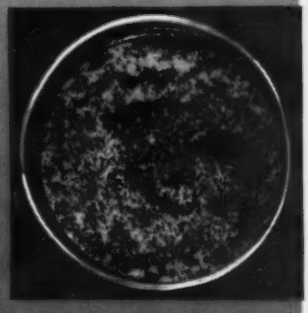
It's your decision...



stop

or

go



DOWICIDES make the difference!

Stop textile losses caused by bacteria and fungi—use the Dowicides!

The Dowicides give protection against mold and bacteria attack through the many stages of textile processing and finishing. Where sizing materials are held in solution form for considerable periods of time, the addition of Dowicides will prevent decomposition due to bacteria and fungi.

The use of Dowicides to make yarns mold resistant is of particular value where long time strength is necessary, as in the manufacture of rug and linoleum backing yarns and tire cord. The Dowicides prevent microbial attack from reducing the strength of the yarns both in processing and in use. Moreover, their use is simple, economical and effective.

If mold and bacteria are causing you trouble, *let us know!* We welcome the opportunity to discuss your problems with you.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago
St. Louis • Houston • San Francisco • Los Angeles • Seattle
Dow Chemical of Canada, Limited, Toronto, Canada

DOWICIDES

germicides and fungicides

CHEMICAL COMMENTS

NEW AROMATIC SPECIALTY FOR PERFUMES, SOAP, COSMETICS

C-64 is a new Dow Aromatic Specialty. It possesses richness and warmth, freshness and sparkle—making it adaptable to both modern and oriental type perfumes. Its odor is powerful and spicy, with a slightly minty touch. A highly stable, crystalline material, C-64 blends well with citrus oils and dissolves even in dilute alcohol. It will not discolor milled soap or cosmetic preparations and is therefore a valuable ingredient in the manufacture of those products.

PROPYLENE GLYCOL USED AS SHORTENING EXTENDER

The food industry is making increasing use of low-cost Dow propylene glycol because of its unusual properties as a solvent, humectant, preservative, and wetting agent. Through the wetting action of this highly purified material it has been found possible to extend the effectiveness of shortening in producing baked goods. Propylene Glycol aids in the dispersion of the shortening throughout the batch with a consequent saving of critical shortening not otherwise possible.

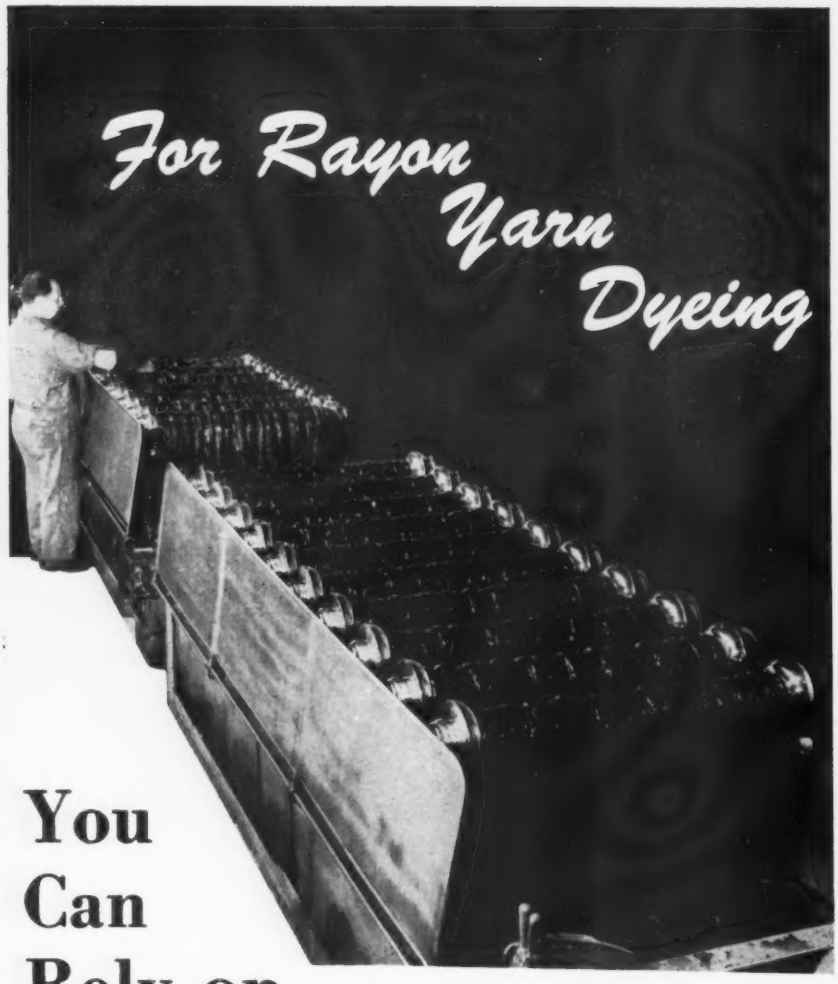
AN EFFECTIVE THICKENER FOR IMPROVED DYE PRINTING

Methocel, Dow cellulose derivative, has demonstrated unusual possibilities as a dispersing, thickening, and binding agent. One of its important applications is in textile printing. As a thickener for fast color salts and diazotized bases for printing on naphthol prepared grounds, it yields prints of exceptional brightness, smoothness, and sharpness of mark with greater penetration and efficiency of dyestuff. Methocel can be used in dyes either for machine or screen printing.

Additional information about any of these products is available on request.

DOW

CHEMICALS INDISPENSABLE
TO INDUSTRY AND AGRICULTURE



You Can Rely on GLOBE

For synthetic yarns Globe affords an efficient dyeing service to meet the growing requirements of many exacting customers.

Yarns we process also include cotton, rayon, worsted, nylon, blend and novelty yarns.

1865 Globe DYE WORKS CO. 1948

4500 WORTH STREET PHILA. 24, PA.

Questions and Answers

(Continued)

exact amount of water to be removed is known. The formula for figuring the required kilowatt is:

[Lb. of water per hr. × 1150 B.t.u. — 1 B.t.u. for each 1° F. of the water above 32° F.] ÷ 3416 B.t.u. per kw.

This formula gives the kw. required for 100% efficiency. Allowance for lower efficiency must be made. It is seldom that an efficiency of 80% can be realized.

Reader Desires Information On Filling Calculations

Technical Editor:

Can you give me information on the following questions?

1. In referring to cloth, what does the term "ground count" mean?

2. In referring to the weight (filling), exactly what would 2.40 mean?

3. In bale checking, what is the speediest procedure to compute filling weight?

4. Exactly how is the filling weight of a bale of cloth computed? (9237)

It is almost impossible to answer all of these questions without some knowledge of the kind of fabric you are talking about. However, the following pointers may be of some benefit:

1. Ground count could mean either the number of warp ends and filling picks per inch or the count or size of the yarn.

2. The term 2.40 applied to filling weight is somewhat unusual. Ordinarily, such a term would be applied to the cloth and would mean that 1 lb. of cloth contains 2.40 yd. If it is applied to filling, there is a possibility that it would indicate the weight of filling per yard. If it is written 2/40, it would mean that the filling is made of two ends of 40s yarn twisted together and would refer to the count of the yarn. Cotton yarns have a standard of 840 yd. of 1s yarn to a pound. Two-ply 40s is equal to single 20s and would have 16,800 yd. per lb.

3. Bale checking could be accomplished by finding the weight of filling in one yard of cloth.

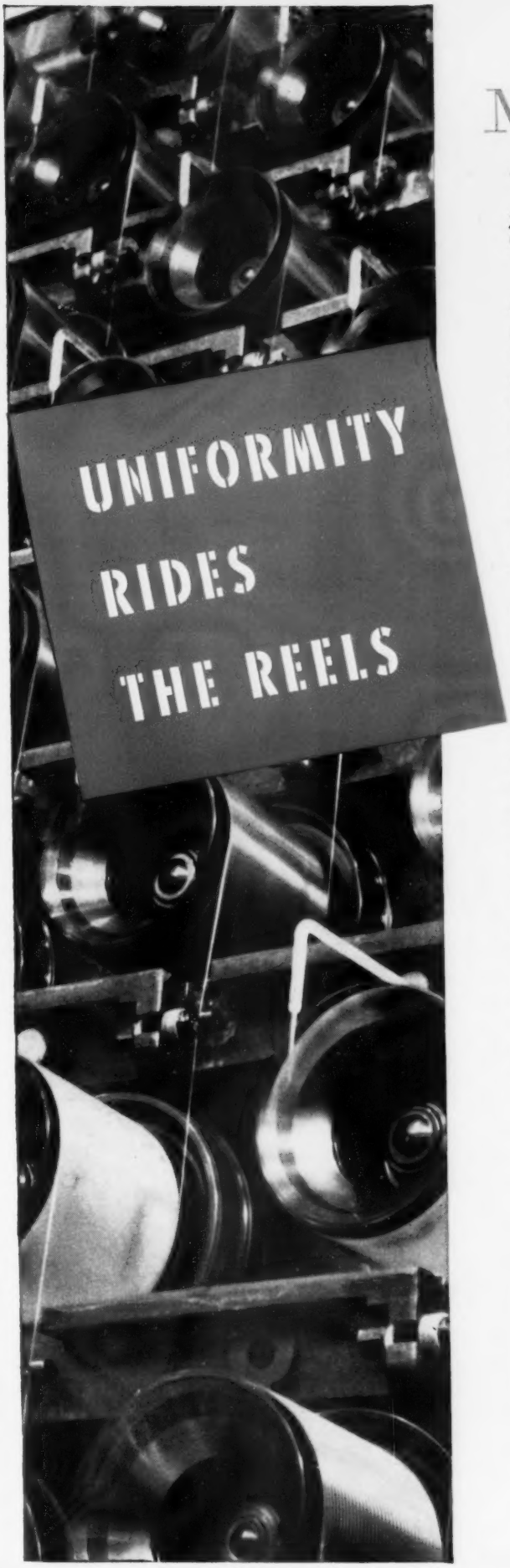
4. To find the weight of filling in a yard of cloth, multiply the picks by the width of warp in the reed and divide the product by the number of yards of the known count required to balance 1 oz.

Example: Find the weight of filling for 1 yd. of cloth, 64 picks per in., 68 in. in reed, single 20s cotton yarn.

64 × 68 = 4,352.

20s cotton yarn = 16,800 yd. per lb., or 1,050 yd. per oz.

4,352 ÷ 1,050 = 4.14 oz. of filling per yd.



Marking Ten Years of Continuous Progress for Industrial Rayon's Continuous Process

In December of 1938, a revolutionary advance in rayon manufacture was introduced with the starting of operations at Industrial Rayon's Plant at Painesville, Ohio. It was the first in the world to produce viscose rayon yarn by a Continuous Process which treated individual strands of yarn before they were wound into a package . . . and thereby attained a uniform quality never previously approached in rayon production.

Today, the original capacity of that plant has been more than trebled and another Industrial Rayon plant at Cleveland has been converted to the Continuous Process and expanded to twice its former capacity. Leading rayon producers in Great Britain, Cuba, Sweden, Belgium, Holland, France and Switzerland have acquired rights to this process . . . some are already in production.

In the ten years that have passed, no development in the rayon industry has challenged the superiority of this great advance. It stands today, not ten years old, but ten years new — a tribute to the engineering skill that has made the Continuous Process a symbol of Industrial Rayon's Continuous Progress.

INDUSTRIAL RAYON CORPORATION
Cleveland, Ohio • Sales Office: 500 Fifth Ave., New York, N.Y.

Makers of
*SPUN-LO Rayon yarn and cloth
*TYRON Rayon yarn, cord and fabric

*Reg. U. S. Pat. Off.

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DOGWOOD OR
PERSIMMON—
FIBRE COVERED
OR PLAIN

BOBBINS

MAPLE, BIRCH
OR BEECH

A HALF CENTURY OF EXPERIENCE

Experience is the best teacher and this company has had half a century of it in manufacturing shuttles and bobbins for all fibres.

All wood for Lowell Products is well seasoned and kiln dried. Every operation is performed in our own shop to control quality and speed up deliveries. Any desired finish can be furnished. May we hear from you?

LOWELL SHUTTLE COMPANY

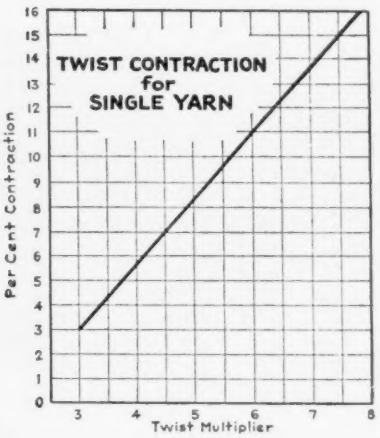
Established in 1896

15 TANNER STREET · · LOWELL, MASS., U.S.A.

Round Table

(Continued)

(Continued from page 156)



hank rovings and yarn numbers were used in calculating pounds per frame hank. Roving often was allowed to run 3 to 4% light or heavy, while yarns were generally held to a 2% variation on the light side. Heavy hank rovings and light yarn numbers meant increased gain when the actual-size numbers and hanks were not used.

3. **Error in clock gearing.** Many instances were found in which the number of teeth in clock worm-gears were incorrect for the size of front roll. The combination of worm gears required for each roll diameter is usually stamped on the clock cover. With correct gears, the correct number of hanks delivered by the front roll will be indicated to a fraction of 1%. The engineers suggested that at least one clock in the spinning room should be checked through the gearing to assure accuracy. A 40-24 worm-gear combination for a 1-in. roll showed 838 yd. actually delivered per hank indicated on the clock. It was correct to 0.24%.

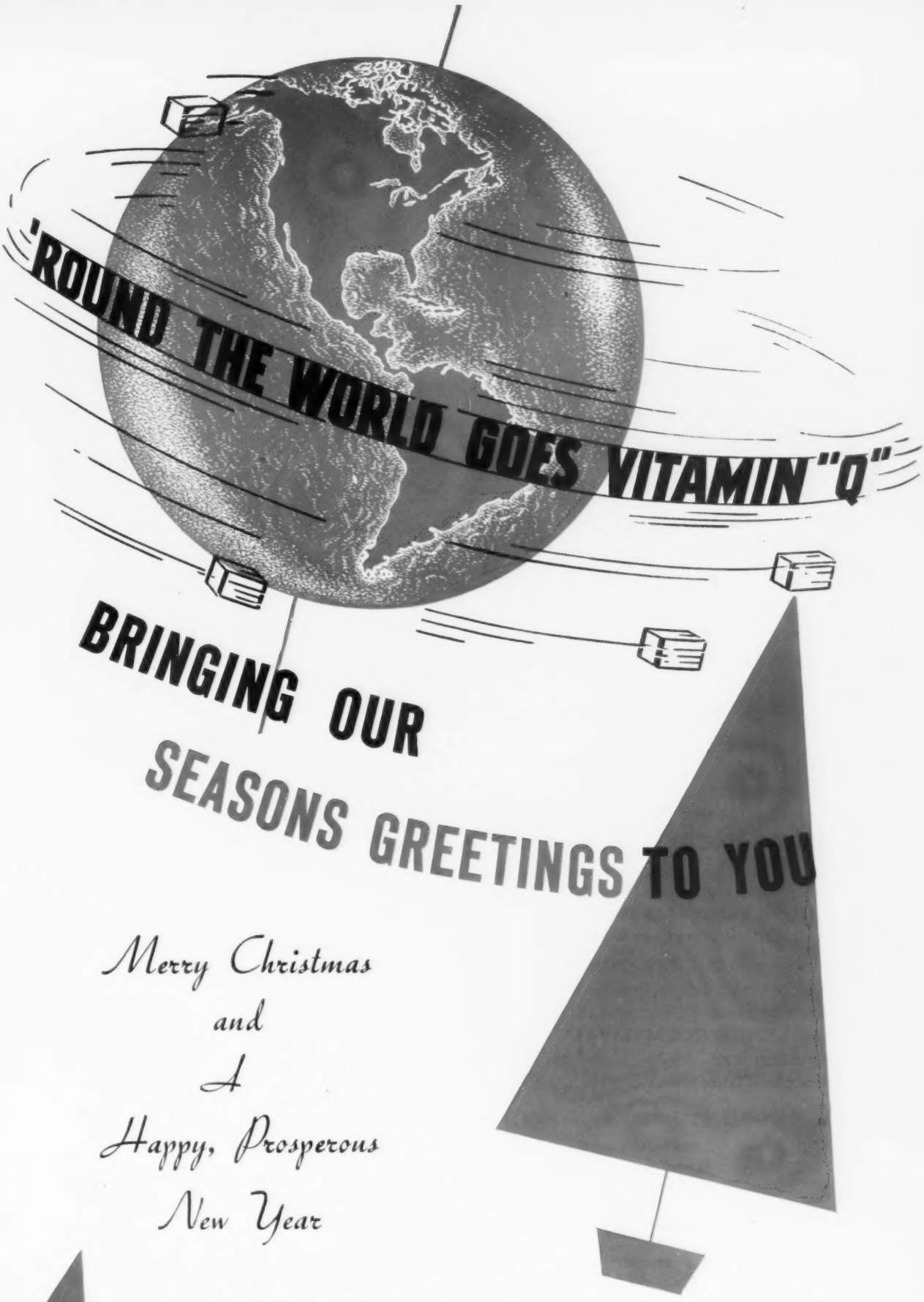
4. **Contraction** due to inserted twist. The 838 yd. of untwisted strand delivered by the front roll contracted to 801 yd. when spun into yarn and wound on the bobbin. Contraction was 4%. Contraction represents a loss between indicated and actual production of a spinning frame. Claims have been made that some clocks are so geared that the contraction is allowed for, but no clocks examined in the engineers' tests had a twist-correction factor. Twist contraction in roving was found to vary between 1 and 2%, depending upon the twist multiplier.

5. **Bare spindles** and ends back on roving. Found to be too small to affect results.

6. **Ends down** in spinning. Loss of production due to this cause was found to be slightly over 1%.

7. **Ends broken** back on spinning amounted to 0.02%.

It is impossible for the spinning


'ROUND THE WORLD GOES VITAMIN "Q"
BRINGING OUR
SEASONS GREETINGS TO YOU
Merry Christmas
and
A
Happy, Prosperous
New Year
BOGER and CRAWFORD
UTICA, N. Y.
PHILADELPHIA, PA.
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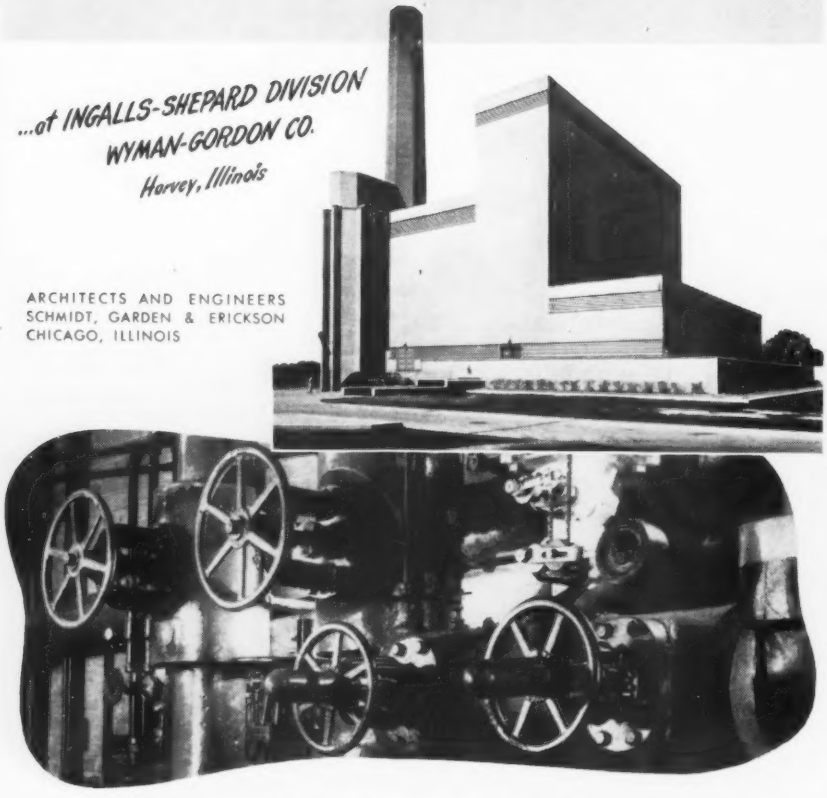
BOGER CITY, N. C.
CLEVELAND, OHIO

modern plant design includes LUNKENHEIMER VALVES

...at INGALLS-SHEPARD DIVISION
WYMAN-GORDON CO.
Harvey, Illinois

ARCHITECTS AND ENGINEERS
SCHMIDT, GARDEN & ERICKSON
CHICAGO, ILLINOIS



Housed in a strikingly modern, all-reinforced concrete, windowless building, the power plant of this manufacturer's forge shop is a picture of modern efficiency. The list of principal suppliers reads almost like "Who's Who" of power house equipment manufacturers.

Among these big names is that of LUNKENHEIMER . . . identifying high and low pressure valves that serve in multiple installations on lines and equipment.

The 85-year old LUNKENHEIMER reputation back of a widely varied line of quality valves has gained the confidence of planning and operating men alike. That's the reason LUNKENHEIMER VALVES are so often specified for modern installations . . . for long life, minimum maintenance and true, low-cost service.

Lunkenheimer Valves are available through Distributors in all industrial centers.

ESTABLISHED 1862
THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI 14, OHIO, U. S. A.
NEW YORK 13 CHICAGO 6
BOSTON 10 PHILADELPHIA 34
EXPORT DEPT. 318 322 HUDSON ST., NEW YORK 13, N.Y.

More Power to Industry Through LUNKENHEIMER VALVES

Round Table

(Continued)

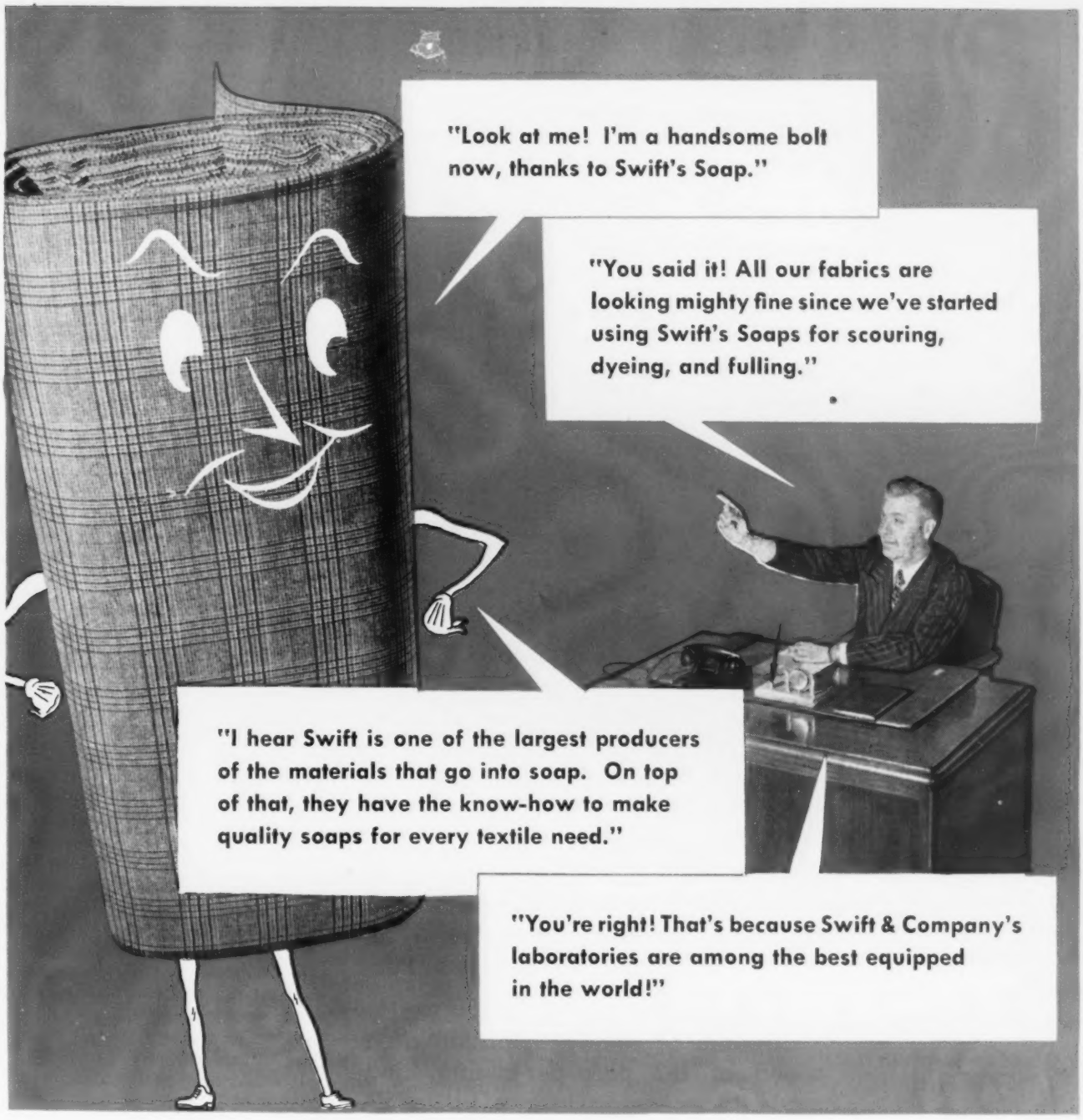
frame to deliver more yarn by weight than is put into the creel as roving. Yet, most cases of mill-estimated spinning production plus waste exceeds the estimated roving production. Many mills are satisfied to charge the gain to increase in moisture content. One of the largest irregularities can be eliminated by using actual hank and yarn numbers from sizing reports. And the percentage of twist contraction shown was too large in its effect on production to be ignored as is usually done. Its effect on labor costs should also be apparent when spinners and doffers are paid by the hank. In the case cited from the engineering survey, 840 yd. were paid for, but only 801 yd. were wound on the bobbin. No instances are known where adjustments are made on production or labor-cost figures to allow for twist contraction. One final general point from the analysis: Spinning production has the advantage of so many possibilities of gain over roving production that the engineers suspect and are looking for hidden losses that offset the apparent gain from twist contraction, regain, etc. (R-445, Salem, Mass.)

"Coulier-Motion Setting Is Skillful Operation"

When October's T.W. arrived, the above title was so unusual that I read the article at once. After fixing full-fashioned machines for over twenty years and writing—lest you forget—my first article on "Coulier-Motion Adjustment" in T.W., May '29, I still feel that there is more to learn.

However, the method recommended by your article for setting of the pitman by the position of the rolls may require a resetting of the eccentric stud. I prefer the method described in my manual [T.W., May '41] in which the pitman is first accurately set, with the center line of the pitman intercepting the axial center line of the coulier cam-shaft; and then followed by the settings of the rolls in the pitman for a balanced motion. May I suggest that the marking of center and end limits of the coulier movement on the bar which supports the driving block, will be found very helpful in the maintenance of a balanced coulier motion, and will show clearly the exact loss of stroke due to wear.

Your drawing of the short rocker arm is vertical with the long rocker-arm inclined to the right. As compared with the illustration of my series of articles, your pitman seems too long. It also appears that it could not be set level. (R-447, Walter A. Simond, Franklin, N. H.)


"Look at me! I'm a handsome bolt now, thanks to Swift's Soap."
"You said it! All our fabrics are looking mighty fine since we've started using Swift's Soaps for scouring, dyeing, and fulling."
"I hear Swift is one of the largest producers of the materials that go into soap. On top of that, they have the know-how to make quality soaps for every textile need."
"You're right! That's because Swift & Company's laboratories are among the best equipped in the world!"

There's a Swift Distribution Point *near you* . . .
to give you fast, efficient service. Call on Swift for

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Vertex Flakes
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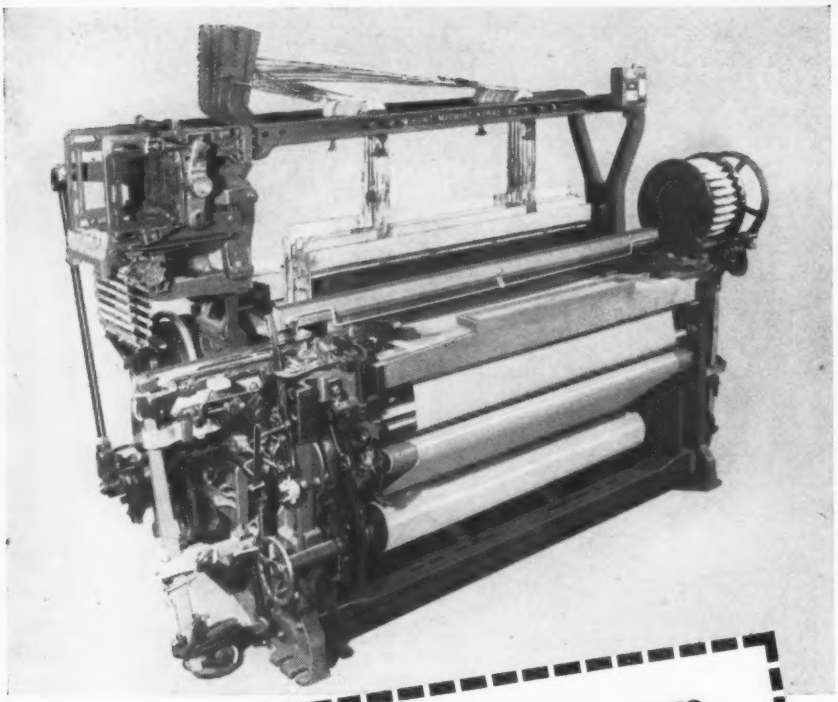
Swift & Company
Soap Department, Chicago 9, Illinois



meet TODAY'S rayon demands with the HUNT MODEL HX-100

Want more facts about the HX-100 Loom? Write today for new descriptive literature which gives complete specifications, prices, and delivery schedules.

THE growing demand for rayon fabrics has focused attention of textile executives on the new Hunt Model HX-100 High Speed Rayon Filament loom.

Capable of steady operation at a speed of 182 picks-per-minute, and made for weaving fabrics up to 50-inches wide, this new Hunt Loom is the practical answer to today's need for greater rayon production.

The latest type Hunt Spreader and much heavier loom sides make this loom steadier and sturdier, which allows a higher operational speed than other makes.

HUNT MACHINE WORKS
INCORPORATED
GREENVILLE, SOUTH CAROLINA

Humidification

(*Continued from page 124*)

yarn tests in spite of the best efforts of the carder and spinner; then, overnight, the weather changed to a comfortable high of 80° F. with a normal relative humidity. Yarn tests jumped simultaneously a full 10%, or slightly above the required standard. This happened in the midst of lots being processed into yarn with no mechanical changes whatever being made.

Observant carders and spinners have noticed that during a mild rainy spell in winter months, the yarn tests improve perceptibly. Sometimes a weather change reverses this happy condition.

A young superintendent rushed to the card room one Monday morning excitedly demanding of the carder why yarn tests on all lots had suddenly dropped 10 to 15%. The carder had to explain patiently that the weather over the weekend had been cold, the spinning room dry heated to 90° F. or more, and in the absence of any humidity whatever, the roving in place on the mules had become completely dry with a consequent loss in cohesion of the fibers. At midday, yarn tests from freshly made roving returned to the normal standard.

In a Northern woolen mill, a certain lot of wool was started on the cards on Friday with a very satisfactory yarn test, the weather being very mild. Over the weekend outdoor temperatures dropped to below zero; and on Monday, yarn-strength tests on this lot dropped below standard. As the emulsion-moistened wool was stored in a building where the temperature was close to freezing, the carder's theory was that the emulsion had congealed on the wool lessening the natural clinging together of the fibers, which is as good an explanation as any.

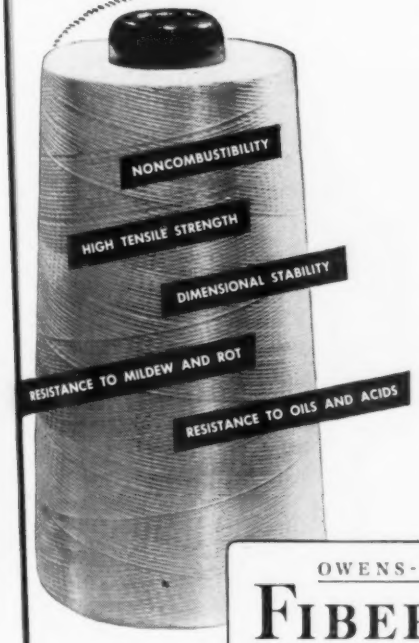
It would seem that a constant temperature of 75 to 80° F. with a relative humidity of 65 to 70% is the ideal atmospheric condition for the processing of wool into cloth. However, in the absence of any exhaustive research on this matter, one can only theorize and be guided by actual experience, which, after all, gives the same answer.

CLOTH WEIGHTS. Every mill man is familiar with the practice of taking out a pick when cloth is coming heavy off the loom or adding one or even two picks when cloth is light in weight.

At an overseers meeting, the boss weaver remarked that an extra pick was being added to bring loom cloth weights up to standard. He attributed the loss in weight to the carder using steam under finisher condensers to

FIBERGLAS* YARNS

PROVIDE EXCELLENT ELECTRICAL PROPERTIES



Top-quality electrical insulating materials must be able to withstand the effects of high temperatures, dust, dirt, moisture, corrosive acids and fumes. That's why industrial designers and manufacturers are using Fiberglas Yarns. They have found that the inherent characteristics of these yarns are ideally suited for this end use. Characteristics such as high tensile strength, dimensional stability (won't shrink or stretch), resistance to heat, oils, acids, mildew and rot, enable them to design and produce a base material with excellent electrical properties—to provide their customers with an ideal base material for insulating impregnants.

Information on types and sizes of Fiberglas Yarns and other technical information is available from the Fiberglas Textile Division, 16 East 56th Street, New York 22, N. Y.

TO WORK WITH YOU: A fully equipped Customer Service and Processing Laboratory is located at our Fiberglas plant in Ashton, Rhode Island. In co-operation with weaving mills and cloth processors, work will be carried on in this laboratory to help you develop suitable applications for glass yarns and fabrics. Process development activities and weaving experiments are also conducted at this plant.

In Canada: Fiberglas Canada Ltd., Toronto, Ontario.

OWENS-CORNING FIBERGLAS *Yarns*

*Fiberglas is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with glass fibers.

. . . avoid hazards by
DRY CLEANING
Your FLOORS with the
TENNANT System

Tennant Floor Machines are available in various sizes for 8", 12" and 16" drum accessories.

If you've had accidents, reduced worker efficiency and slumps in morale due to slippery, oily floors . . . then here's a proved, practical answer: *fast, mechanized DRY-cleaning with the Tennant System.*

As hundreds of mills know from experience, the Tennant System eliminates scrubbing and its *hazards . . . keeps* your floors clean, bright and dry . . . costs *less* to use.

The TENNANT System

1. RESTORES! Brings your dark, oil-soaked floor back to life by removing rough, grimy topwood fibers. Provides a dry, sound, vigorous surface.

2. HARDENS! Fast, effective sealing process fills, binds and hardens floor surface. Increases wear-resistance, durability. Resists soilage.

3. DRY CLEANS, eliminates scrubbing! Saves hours of hard work and cuts cleaning costs. Makes floors extra-bright, clean, smooth. You'll be amazed at the results!

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TENNANT
Floor Maintenance System

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G. H. TENNANT CO.
2586 N. 2 St., Minneapolis 11, Minn.

Without obligation please send Bulletins describing the Tennant System; also photos, comments from mills, performance data, etc. *What mills in our vicinity use the Tennant System?*

Name _____
Address _____
City _____ State _____
☐ Cotton ☐ Woolen ☐ Silk-Rayon
☐ Knitting ☐ Finishing

The Tennant System
ENDS SCRUBBING
and can be used throughout your mill.

combat static and claimed the steam added moisture to the roving which soon dried out in the spun yarn. A careful check of roving weights both with steam jets open and closed showed that the brief fraction of a second that the roving passed through the steam-moistened air had no effect on roving weights.

In a northern mill during winter when there was no humidification in the filling-storage, warping, or weaving areas, the dry, steam-heated air was absorbing moisture from warp and filling yarns, hence a loss in cloth weights off the loom. Adding a pick in the loom under these conditions means adding that much fiber, with an increase in finished weights of the fabric and a loss in the slender margin of profit.

Air conditioning or some accurate system of temperature and humidity control is most needed and is of the greatest benefit in the prepared-stock storage-bin areas in carding, spinning, warping, weaving, and dry-finishing departments.

All wool blends are moistened with liberal amounts of a water and oil emulsion, the oil for lubrication and the water to moisten the fiber. The treatment aids card condensing, increases the binding effect of the fibers, and sets the twist more firmly in the yarn. The amounts of emulsion applied vary according to the ideas of the carder, but are usually from 20 to 24 qt. per 100 lb. of wool. Whatever the amount, the point to be considered here is that prepared wool blends contain an abnormal amount of moisture. The excess dries out quite rapidly in a dry atmosphere. Humidification does not completely stop loss of moisture, but it does slow down the drying out and does keep the blends in an ideal condition for longer periods.

A gallon of emulsion weighs approximately 8 lb. Use of 5 gal. per 100 lb. of stock means 40 lb. of moisture and 100 lb. of wool fiber. The carder starts a freshly prepared blend with the full amount of emulsion applied and gets the required weight in the roving; the spinner also adjusts his machines and gets the correct yarn weights and tests. Then, under very dry conditions, this blend may lose 15% more of its moisture over a weekend or during a few days' operation, and the card feeder goes right on weighing out the same weights but is weighing 15% more fiber in place of the lost moisture. This may or may not show in roving and yarn weights but most certainly it will be evident in the cloth weights.

Often the moisture loss in the stock exceeds 15%, and this fluctuation in moisture content sometimes increases

Bright and Gay

WITH

ANTI-FUME DE PASTE

Anti-fume DE Paste is an inhibitor of atmospheric gas fading of dyed acetate rayon.

As is well known, a number of the acetate dyes, even those having the best light fastness, fade when exposed to atmospheric gas fumes. The use of selected dyes from this group, protected by Anti-fume DE Paste, properly applied, makes possible the production of certain important shades on acetate rayon with better all-round fastness.

Anti-fume DE Paste is substantively absorbed by the material, and its protective effect persists after washing and dry cleaning. When properly used, it provides a valuable new aid for the acetate rayon dyer. Our technical personnel are cooperating with those interested in the use of this product.

E. I. du Pont de Nemours & Co. (Inc.),
Dyestuffs Div., Wilmington 98, Del.

Du Pont Dyestuffs

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

DU PONT

REG. U.S. PAT. OFF.

The 48" Tolhurst Suprex Extractor reduces extraction time on many textiles by as much as 40% to 50% because it operates at the amazing speed of 1000 RPM.

Tolhurst's Suprex is the only 48" extractor built which operates at this high speed without shaking the case. You can balance a small coin on its edge on the case even when the basket is rotating at full speed! This freedom from vibration is accomplished by Tolhurst's patented method of suspension which permits the extractor basket to rotate independently around its true center of gyration. The end result is that the Suprex can handle much greater out-of-balance loads, extracting them quickly, efficiently and safely. Standard equipment on the Suprex includes stainless steel basket, stainless steel safety cover, automatic timer and quiet "V" belt motor drive. The standard Suprex Extractor is designed for general mill service. For extracting cotton raw stock and for other applications where high production is required, the Suprex can be equipped with a frequent-start motor.

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EAST MOLINE, ILLINOIS

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the normal variation in yarn weights to such an extent that patterns of contrasting colors in the cloth are marred by streaks and bars. Not only are there uneven cloth weights, but damaged cloth that must be classed as seconds.

The woolen carder gets but one shot at making a roving that will spin into a smooth, strong yarn well within the tolerance of weight variation allowed. Making a smooth yarn, even in weight, on the woolen system is a tricky, exacting process involving many factors. If one is overlooked, faulty yarn may result and cause defects in the cloth.

Prepared stocks, loosely packed in storage bins, will in a few days time dry out on the surface and sides to a depth of 12 in. or more, and the carder is handicapped when forced to card stocks partly dry, partly moist.

STATIC. Static, that great trouble maker, can utterly disrupt the smooth operation of a group of cards. It is generated by friction of wool fiber against card wire, Peralta rolls rubbing against wool felt cleaners, and by friction generated by the rubbing motion of rub aprons. It is worse at higher elevations than at sea level where more humidity is usually present in the atmosphere. It is significant that static seldom, if ever, is troublesome during the mild months of summer. It therefore seems logical to assume that if atmospheric conditions similar to summertime could be reproduced, troublesome static would be eliminated. The devices on the market to neutralize static are very good but are designed for and applicable to only restricted areas.

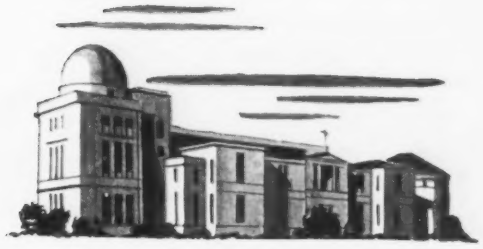
There should be no cool drafts of air in the card room; cool air favors the generating of static. In extremely cold weather, the coldness outside seems to radiate even through double windows, settle to the floor, and flow like a current of cold water. It sweeps along under the cards until it finally merges with the warm upper air of the room. This cool air strikes some machines more than others, or it may strike one side of a card and cause static to be evident on one side or at one point in a train of cards. An atmospheric condition of this kind rarely occurs in the summer months when warmth and natural humidity are everywhere. It is the lower one-third of a room where the cooler air carrying less moisture settles, and this space is where manufacturing operations are carried on and where stocks are stored.

One aspect of static is usually not considered; namely, its effect on yarn tests. Roving ends heavily charged with static when being reeled off the spools repel each other, each end flying out and away from its neighboring

FOR

DEPENDABLE TIME

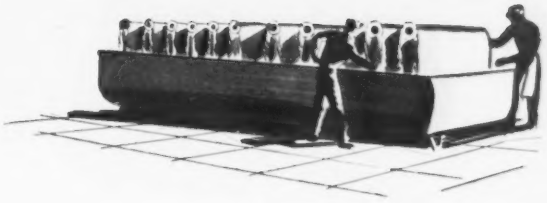
... the Naval Observatory at Washington is the *accepted standard* of the nation.



FOR

DEPENDABLE LUBRICITY

... NOPCO 1111 is the *accepted standard* of the Rayon Industry.



NOPCO* 1111

CREPE SOAKING OIL AND WARP SIZE SOFTENER

Here are some reasons why NOPCO 1111 is preferred by Rayon Throwsters and Weavers in America, Canada and other countries . . .

Unsurpassed softness and lubricity . . . controlled pebble . . . ease of removal during boil-off . . . no volatilization in drying . . . no oxidation or rancidity.

For full information write for "Important Points Regarding Rayon Warp Sizing," "NOPCO 1111—Soaking Oil for Rayon Crepe Yarns."

NOPCO CHEMICAL COMPANY, Harrison, N.J.

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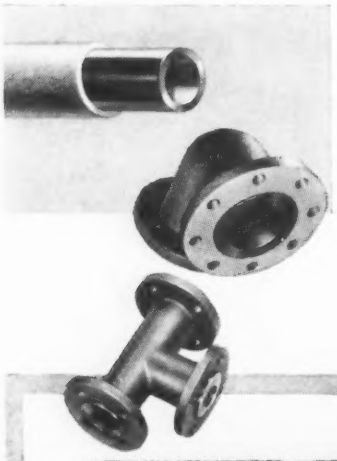

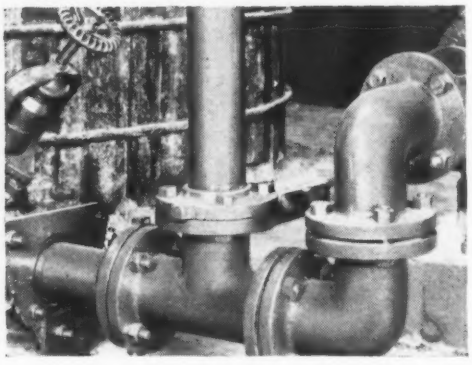

resists corrosion

- reduces shut-downs and lost production!
- saves time and labor!
- readily field-fabricated!

The conveyance of corrosive liquids can prove as hard on profits as it is on equipment. Saran Lined Steel Pipe is designed and constructed to protect YOUR profits. It combines the desirable features of steel pipe—rigidity and pressure strength—with Saran's unusual resistance to most corrosive chemicals, solvents, and erosion. Another advantage is ease of field fabrication. For general service, Saran Lined Steel Pipe can be used at temperatures between —40° and 190°F.

Saran Lined Steel Pipe comes in maximum lengths of 10 feet and in sizes from 1 to 4 inches. Plug valves and fittings, also Saran Lined, include elbows, tees, companion and reducing flanges, and gaskets. AVAILABLE IMMEDIATELY. Write us today for further information concerning Saran Lined Steel Pipe and how it can solve your problem. Manufactured by The Dow Chemical Company, distributed nationally by Saran Lined Pipe Company.

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DOW
CHEMICALS INDISPENSABLE
TO INDUSTRY AND AGRICULTURE

ends. Is it not reasonable to assume that fibers in the roving ends likewise are striving to fly apart causing much loss in the binding effect of card condensing? This may account for certain fluctuations in the tests for which the carder and spinner can give no reason. Static seldom gives any apparent trouble in woolen spinning; but under cool, dry conditions any friction in proximity to an animal fiber generates static.

CLOTH WEIGHTS. When a customer orders a fabric weighing 12 oz. per yd., that is the weight he expects to get. If underweight, he may suspect he is being defrauded; if much overweight, the mill is giving away money. An annual production of a million yards at $2.00 per yd. averaging 0.125 oz. per yd. overweight means a considerable loss to the mill.

During the postwar years, woolen mills have been installing expensive modern machines capable of a larger output per unit in a campaign to meet ever increasing competition. With more efficient machines requiring less attention, there still is and always will be the human element that should be considered. Under comfortable, pleasant-working conditions, workers are at their best, are more alert, take greater pride in their jobs, and have more respect for the mill organization. They feel fresher and can more successfully be induced to accept their machine loads. Machines as well as humans perform better under favorable and uniform atmospheric conditions. Output per manhour is the factor that counts most heavily in labor costs.

Fiber Sorters

(*Continued from page 109*)

tual value of each specimen determined.

There are certain restrictions and objections that have always prevailed against a more general use of fiber arrays made with the older types of sorters. Great patience and much skill are required to make a suitable array. A large amount of time must be spent in the preparing, arraying, and computing the value of each specimen. Uncontrolled fiber stretch, unavoidable fiber breakage, and personal errors prevent consistently uniform results. These objections have led, in many cases, to the substitution of more rapid and costly electronic devices for estimating fiber lengths.

ARRAYS INDISPENSABLE. Practical cotton men contend that they obtain more real fiber-length information

Installing electrical conduit?

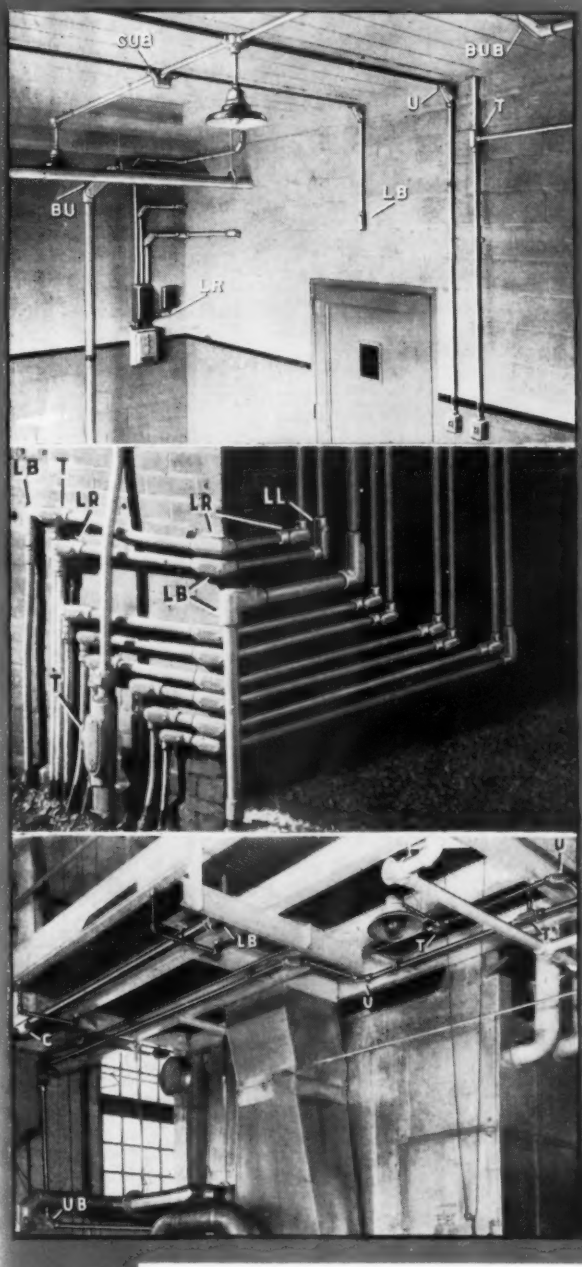
It's much **easier** with

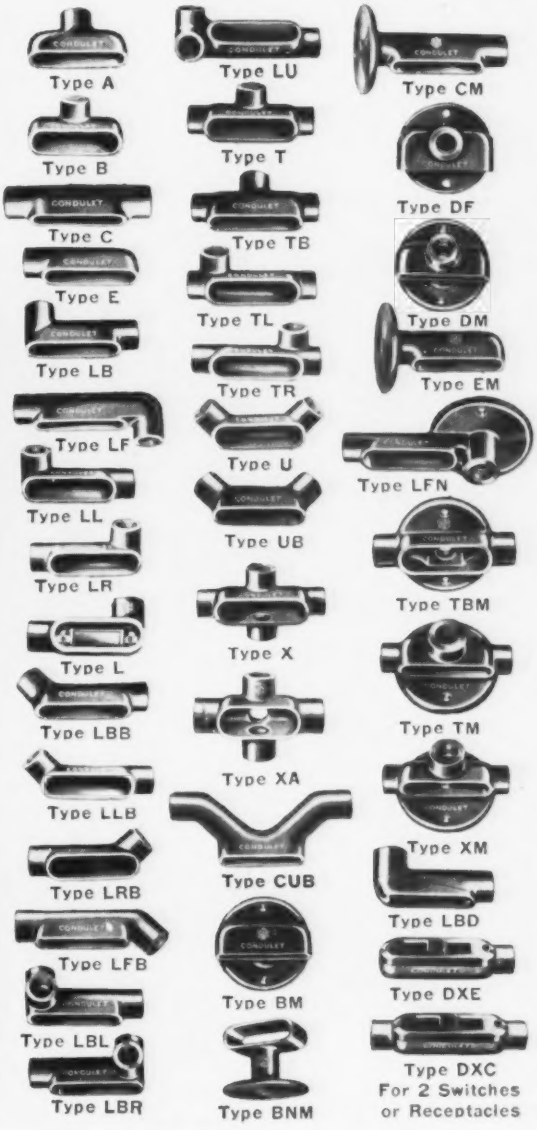
Obround CONDULETS*

because they are so handy and there are

49 different types

A wide variety of interchangeable covers and wiring devices with Crouse-Hinds' exclusive Wedgenut Fastener; sizes to fit ½ to 6-inch electrical conduit.





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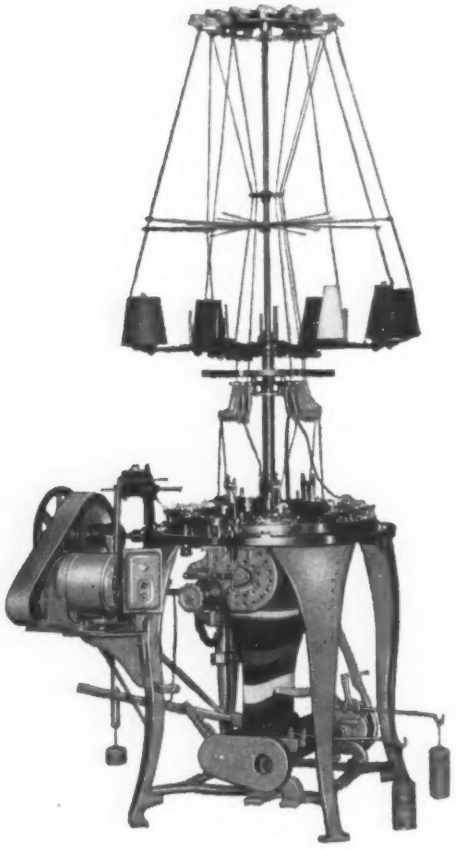
LOOK BETTER IN A SWEATER

A Softer Fabric Adds to the Sales Value of Your Sweaters



Leighton Knitting Machines have always excelled in producing soft-feeling sweater fabrics from ordinary or low-grade wool or worsted yarns.

An ultra-soft effect is obtained by brushing with an attachment to Leighton Machines and with subsequent washing, producing sweaters with a soft finish comparable with that of the finest imported garments..

The Leighton Knitting Machine is readily equipped for brushing because the face of the fabric is on the outside—facing the operator.

Specify the Automatic Brushing Attachment when ordering Leighton Knitting Machines.

LEIGHTON MACHINE COMPANY
ESTABLISHED—1873

LEIGHTON

MANCHESTER NEW HAMPSHIRE
INCORPORATED—1894

from a well-arranged fiber array than they do from an abstract diagram of comparative fiber-length values which requires the use of an arbitrary constant to convert it to actual length values. Government technologists use and recommend fiber arrays for greater precision in determining length values of the longer-staple cotton. Fiber sorters also afford the only practical method for complete and precise waste analyses.

Many mills that have used fiber sorters in a limited way for fiber-length or waste analysis have failed to take full advantage of the valuable information made available through a more extended use of the device. Improved types of fiber sorters can be applied to many mill problems involving fiber lengths and waste content that are beyond the scope of old sorters. The results can be obtained in a fractional part of the time previously required. Little skill and training are necessary; and the methods and procedures can be so well standardized that the results obtained by different operators on the same specimens are nearly identical. The design of the sorter and the simplified method of preparing, arraying, and computing fiber-length values reduce personal errors to a minimum.

MILL USE. The many practical ways in which a fiber sorter can be applied to routine mill problems may best be shown by what a few progressive mills have done. There are also many specialized problems peculiar to certain yarn organizations that will suggest additional uses of the fiber sorter.

New seasons' crops, new types, and regional varieties are arrayed and compared with previous arrays. Fiber-length analysis will foretell spinning qualities of new cottons that may be due to variations in fiber-length values.

A graphic diagram of fiber-array outlines may be quickly made on an improved sorter and filed away with identification marks for future reference. The following information can be obtained either directly from the array or from the outline diagram: maximum fiber length, upper-half mean, upper-quartile length, classified length, mean or average length of all the fibers in the array, uniformity ratio, and the percentage of any selected fiber lengths.

Four or more typical bales from each mix are arrayed, and the average of the means of the four bales is used for the mix-length index. This is plotted against previous mix indices and their corresponding skein-strength factors. A low-mix index forewarns of

Rayon Reports

ed Monthly by American Viscose Corporation, New York, N.Y. DECEMBER, 1948

AVISCO consumer service provides basic information on Rayon to the public

Because rayon is a comparatively new textile fiber, large segments of the public still do not know as much about it as they should. To counteract this situation American Viscose Corporation conducts a broad Consumer Service Program, developed by educational specialists to distribute basic information on rayon to the greatest possible number of users.

★ ★ ★

Schools

To assure that young people get the correct facts about the nature of rayon, Avisco conducts an extensive educational program in the schools. Special material has been created for all age groups through the college level. This includes not only teacher's lesson guides, but leaflets, comic books and motion pictures. Nearly 2½ million of the school population of the country made use of this material during the school year 1947-48.

Women's Clubs

Members of these organizations are leaders in their communities. To keep them abreast of developments in rayon, three program kits are available and widely used. These deal with such subjects as care of rayon and the different rayon fabrics and their use in the wardrobe. From January 1948 to September 1948, 19,769 club chairmen received programs for an estimated 2,000,000 club women.

Press and Radio

To keep the newspaper reading public informed on the progress of rayon, Avisco provides editors and radio commentators with newspaper articles, scripts, mats and leaflets dealing with newsworthy developments. Each week during 1947, an average of 450 newspaper and radio stories were published or broadcast.

Rural Families

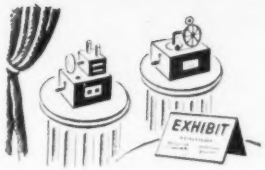
In cooperation with the Department of Agriculture textile experts, Avisco furnished leaflets and technical information to farm women on the use and care of rayon fabrics. This program is made available to 3,000,000 rural women.

New Technical Reports Available

American Viscose Corporation is sponsoring a program of textile research undertaken by the Ellen H. Richards Institute of Pennsylvania State College. The following reports of interest to the textile industry have been published and are available on request:

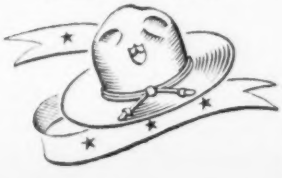
- Evaluation of Uncontrolled Gas Fading Equipment
- Strength of Rayon Fabrics
- Improved Equipment and Methods for Fluidity – Measurements of Cellulose and Cellulose Acetate
- Development of Controlled Equipment for Testing Fastness to Atmospheric Gases
- Accelerated Aging Test to Light
- Effect of Laundering on Gas Fading Performance of Rayon Fabrics
- A Comparison of the Effect on Rayon Fabrics of Various Gases Under Controlled Conditions

RAYON 20 YEARS AGO



ENGLAND, December 1928 – The Textile Machinery and Accessories Exhibition held at Manchester last month stressed machinery used in producing and manufacturing rayon. New machinery for all types of plants was shown.

NEW YORK, December 1928 – The Viscose Company is now advertising new Crown Rayon Brand fabrics for home decoration and stage effects.



WASHINGTON, December 1928 – After an extended service test a rayon hat cord for use with the service hat, has been adopted and approved as standard by the War Department.

MAKE USE OF *Avisco*®
4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

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2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

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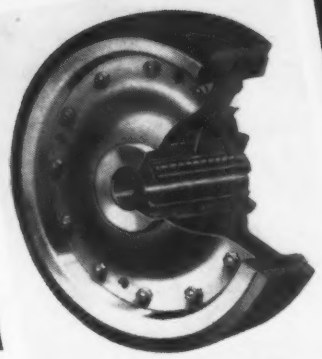
Precision-made Darnell Casters with the DOUBLE BALL-BEARING SWIVEL assure a long life of efficient, economical service



FREE Manual

DARNELL CORP. LTD. 60 WALKER ST. NEW YORK 13 N.Y.
LONG BEACH 4, CALIFORNIA 36 N. CLINTON, CHICAGO 6, ILL.

a coming low-yarn-strength factor; and precautions can be taken to prevent weak yarn and poor-running work in the spinning and weaving.

All disputed-length bales can be arrayed. Precise fiber-length findings will either confirm or correct the classer's determination of length. The findings can form the basis for a decision whether to reject, accept, or arbitrate.

Bales of wasty appearance, even though of the required classified length, can be arrayed. Bales showing short mean lengths are either rejected or mixed in small quantities with bales of longer mean lengths. The cotton classer may suspect low mean length in certain bales, but he cannot confirm his judgment or detect the percentage of short fibers without the aid of fiber arrays.

Certain types or regional varieties of cotton are found to equal or exceed, in mean-length values, other cottons of longer classified lengths. This permits the use of cheaper and shorter cotton without the loss of yarn strength or the sacrifice of good running work. [See T.W. Cotton Chart, Oct. '48]

Arrays are made of staple before and after processing. This is important when running wool blends, rayon, or other synthetics. Types of beaters, speeds, or settings can be changed to prevent damage or breakage of staple.

Fiber arrays are made of rayon, other synthetics, and cut-wool staple when received in order to assure that the invoiced lengths are correct and the proper settings are used during processing.

FLAT-STRIP WASTE. When card-flat strips are purchased from other mills for waste-yarn mixtures and are found to vary greatly in percentage and lengths of good fiber, the supply can be obtained from mills showing the greatest length values.

Periodic arrays are made of card wastes. Correct speeds and settings prevent excessive loss of good fiber. Reduction in spinnable fiber loss means a saving in cost of the cotton required.

Arrays are made of comber noils to prevent loss of good fiber. Total percentage of noils may be within the prescribed limits, but the amount of long fiber may be excessive.

All roll settings should be governed by the length of the fibers shown by fiber arrays of stock made at the point of processing and not by the classified length of the cotton in the bale.

Bale cotton, picker lap, card, comber, and drawing sliver are laid down in thin arrays suitable for nep or trash count. Neps per grain for comparison

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FOR SLASHERS RUNNING ANY YARN

The new Barber-Colman *Electronic* Moisture Content Controller is applicable to slashers of all types which are processing warps of all kinds including cotton, spun rayon, viscose, acetate, aralac, or worsted wool, or any combinations of such yarns. Thus it will provide accurate automatic control of slashing in any mill, regardless of the type of yarn, count or denier, or size of beam. The moisture content of beams prepared for the weave room can be held within extremely close limits, and with reliable uniformity regardless of any changing conditions.

FOR ANY VARIABLE SPEED DRIVE

The control circuits of the new Barber-Colman *Electronic* Moisture Content Controller are such that its governing action can be applied to *any* of the various types of variable speed drive in common use on slashers. The main purpose of the Controller is to adjust, constantly and automatically, the speed of the slasher so as to compensate for variations and produce a beam having a uniform and predetermined moisture content throughout. For detailed recommendations regarding the use of Barber-Colman equipment in your slasher room, we suggest you consult your Barber-Colman representative.

Quality plus . . . Know How

For further information, write for Bulletin F-3156.

BARBER-COLMAN COMPANY
ROCKFORD, ILLINOIS
BOSTON MASSACHUSETTS • GREENVILLE SOUTH CAROLINA • GREENSBORO NORTH CAROLINA

with established standards can be easily obtained by weighing a specimen after counting and dividing the total nep or trash count by this weight in grains.

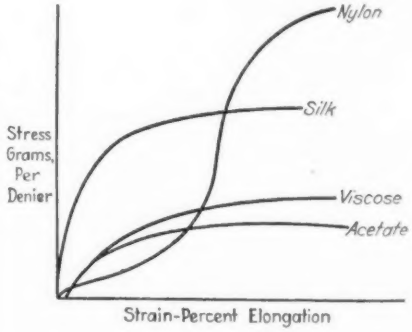
Improved fiber sorters afford a choice of methods in laying down arrays. They may be laid down in their natural state that retains all the impurities (neps, trash, pepper, etc.) for judgment of purity of specimen; or all the impurities may be removed, and only good net fiber shown. The percentage by weight of fiber to trash can also be seen.

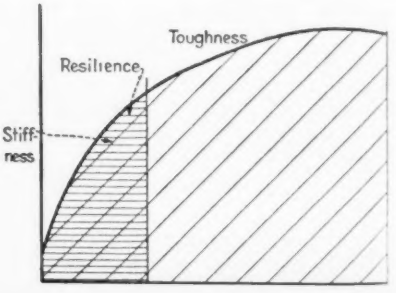
The various uses of fiber sorters, as described, by no means include all the probable valuable uses to which the machines can be applied. It should be remembered that the new, improved fiber sorters are precision instruments and that the consistently reliable results obtained are not dependent on the skill or judgment of the operator. A reliable and rapid means of fiber-length analysis is as essential to truly efficient cotton-mill operation as a grain scale, yarn reel, or yarn-strength tester.

Fabric Development

(*Continued from page 131*)

property, good or bad, which may be reflected in some property of the textile or fabricated article. When producing a new yarn, and some small adjustment is made—such as in twist, lubricant, fiber component, or even in the atmosphere—any deviation from the standard curve—will give an indication of the performance to be expected. Clues provided will lead toward the precise property





which is being sought. A few of these qualities follow:

1. **Breaking strain and elongation.** More important than the strength at break is the degree of permanent deformation which occurs at stresses encountered in normal usage. Take for example, the case of a transmission belt. It is exposed to such forces as centrifugal, torque, and impact. These operating loads may be measured to reveal that the point of failure is at, say, 20% of breaking load. Looking at the chart, you will find one fiber very good at break, while somewhat poor at 20% of break. In apparel goods—assuming that permanent fiber deformation occurs when a load is applied, such as the bending of one's knee—can a fiber be blended into the yarn having a high resistance to the actual load of bending the knee, but not necessarily a great deal higher at break? For example, let us look at nylon and silk. Silk at less than 50% of break extends only about half the amount of nylon.

There are other points about the curves which have been pointed to by various workers as indicating the various yarn and fiber properties—for example, the work of rupture. This is defined as the area below the curve. Many consider it to be a unit which sums up the toughness properties of a yarn. As an illustration, take a shroud line in a parachute. When the impact of opening strikes the cord, the ability to elongate progressively reduces the apparent load. This is the same effect as that obtained when testing yarns and fabrics at high and low jaw speeds.

Another useful property indicatively shown by the curve is that of resilience. It is indicated by the area below that part of the curve up to the point where excessive extension begins to occur. It is this portion in which permanent deformation does not take place. It has been suggested that the stiffness of a fiber may be measured in the following manner. If a line is drawn from the yield point (the point on the curve where distension turns from temporary to permanent), to the intersection of the axes, then the angle formed by this line and the horizontal axis gives an indication of relative stiffness. The greater the angle, the higher the stiffness value.

No longer should one make a yarn and then find a use for it—first the use should be determined, and then the yarn made to give the best possible ultimate performance in that use.

Because a yarn of at least a minimum strength is essential, some suggestions as to how this may be pre-

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TEMCHRON, the only *completely electronic* time-temperature cycle controller, provides hitherto unattainable accuracy, flexibility, and reliability in the control of size cooking. Identical cycling is assured from batch to batch, for any dial settings, yet simple adjustments permit cycle changes as required by different size formulas. Changes in any part of the cycle — warm-up time, cooking temperature, cooking time, or holding temperature — can be made *by simply resetting calibrated dials.* Lights on the panel indicate when the size mixture is being raised to cooking temperature, when the size is cooking, and when the cooking is completed and the mixture is at the desired holding temperature. Cooking and holding temperatures are independently adjustable within a range of 100° F to 210° F. Length of warm-up time is adjustable from 15 to 90 minutes, and cooking time from 20 to 180 minutes.

Quality plus . . . Know How

For further information, write for Bulletin F-3054.

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The Ansul 4 Extinguisher instantly smothers lint fires and protects unburned lint with a harmless, fire-resisting layer of Ansul Plus-Fifty Dry Chemical.

Ansul Dry Chemical is non-corrosive, non-abrasive and IT IS DRY. A speedy put-out with an Ansul 4 Fire Extinguisher eliminates costly shutdowns for repair of corrosion damage or for clean-up after sprinklers operate.

This small, compact extinguisher is particularly adapted for protecting many lint fire hazards common to the textile industry . . . cards, twisters, looms, etc.

Many mills, equipped with Ansul Dry Chemical Fire Extinguishers, have saved thousands of dollars by stopping lint fires FASTER without damage to delicate machinery or to the product manufactured.

For picker rooms, opener rooms and other locations where large masses of cotton are handled, the larger capacity Ansul 20 and Ansul 30 Dry Chemical Fire Extinguishers are recommended.

All Ansul Dry Chemical Fire Extinguishers are approved for use on fires involving live electrical equipment.

Ask for your copy of File No. 214. You will receive factual data on how Ansul Dry Chemical Fire Extinguishers will reduce fire losses in your mill.

Model 20 Model 30

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN
DISTRIBUTORS IN ALL PRINCIPAL CITIES

dicted when laying down a fiber blend are given.

Certain formulas might be found useful by the yarn and fabric designer. They have been advised by technical men who took the trouble to find short cuts. They are not entirely accurate, but they provided answers which are correct within the bounds of practical workmanship.

Every spinner is faced with the problem of determination of the finest count which may be spun from a given fiber. For the natural fibers, this problem has been solved by decades of trial and error. The spinning limits of 56s wool, or 1 1/16-in. American cotton is generally known, but rayon has brought along another language. For all fibers, the fineness of spinning is obviously dependent on two prime considerations: fiber diameter and fiber length.

First, it is necessary to determine fiber diameter in microns. Assuming the fiber to have a round cross section this is obtained by the following expression:

$$\text{Diameter} = 20 \times \sqrt{\frac{\text{Denier}}{3.14 \times \text{specific gravity}}}$$

Approximate specific gravities of various fibers are as follows:

Viscose	1.5	Acetate	1.3	Nylon	1.14
Cotton	1.5	Wool	1.3	Vinyon	1.35

Second, there must be a minimum number of fibers per cross section to provide adequate weaving strength. For the various systems, these minima may be set at:

Cotton spinning	56
Woolen spinning	125
Worsted spinning	70

The result should provide a skein strength product of from 1,200 to 1,500, most satisfactory for weaving. Strength product means the product of breaking strength in ounces and count. A factor results which is equally adaptable for all counts of yarn.

Third, it is required to establish the ratio of staple length to fiber diameter. To do this, it is necessary to convert staple length to microns, by multiplying length in inches by 25,000.

To allow maximum strength and nep-free spinning, a desirable ratio should be approximately 3,200 for fine counts and 3,000 for coarse counts.

Fourth point is to determine spin limits.

$$\frac{\text{Desirable ratio} \times \text{desirable fibers cross section}}{\text{actual ratio}} = \text{Actual fibers cross section}$$

Denier of fiber × fibers per cross section = total denier of yarn.

Convert total denier to count-system required for actual count spinnable.

When mixed fibers are used, for example the use of 1½-den. and 3-den.

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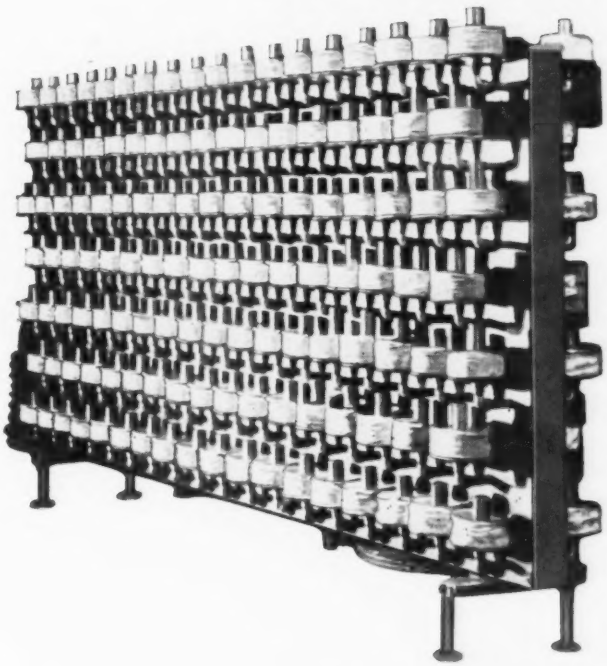

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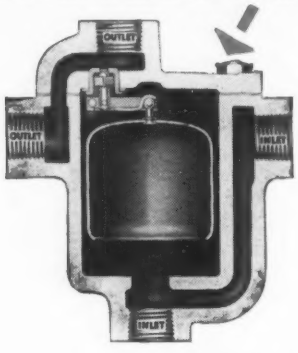

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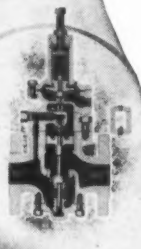

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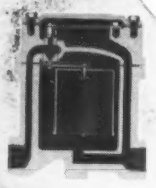

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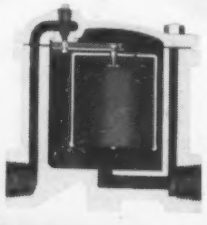

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fibers of equal length, it is advisable first to calculate the average denier.

When spinning a blend of 50% 1.5-den., and 50% 3-den. fibers, it is not possible to say that the mean of 1.5 and 3 is 2.25, therefore the average denier is 2.25. A closer study will show that since the 3-den. fiber is twice as heavy as the 1.5-den. fiber, for an equal weight there will be twice the number of 1.5-den. fibers as 3-den. fibers, given lengths. Therefore the average denier should be the mean of 1.5 plus 1.5 plus 3, which equals 2. This may be expressed as:

$$\frac{\%\text{ fiber type A}}{\text{den. A.}} + \frac{\%\text{ fiber type B}}{\text{den. B.}} + \frac{\%\text{ fiber type C}}{\text{den. C.}} \text{ etc.} = \frac{100\%}{\text{Average den.}}$$

For example in a blend of 50% 1.5-den. viscose, 25% 3-den. viscose, 25% 4-den. acetate, we would obtain the average denier as follows:

$$\frac{50}{1\frac{1}{2}} + \frac{25}{3} + \frac{25}{4} = \frac{400}{12} + \frac{100}{12} + \frac{75}{12} = \frac{575}{12} \text{ or } \frac{100}{2.08}$$

Therefore the average denier would be 2.08. In order that the same procedure may be applied to any blend, a short list of fiber diameters and equivalent deniers is appended, covering those grades of wool and cotton in most popular use:

Fiber	Fiber Dia, Microns	Denier
Wool 64s	20.9	5.02
58s	24.9	7.25
50s	30.5	10.55
40s	38.7	15.6
Cotton Texas	19.1	1.8
Upland	18.8	1.66
Peruvian	19.5	1.99

Because of the irregularity of fiber dispersion in woolen spun yarns, the use of the count determination formula for woolen counts may be misleading to a small degree, but nevertheless it will be close.

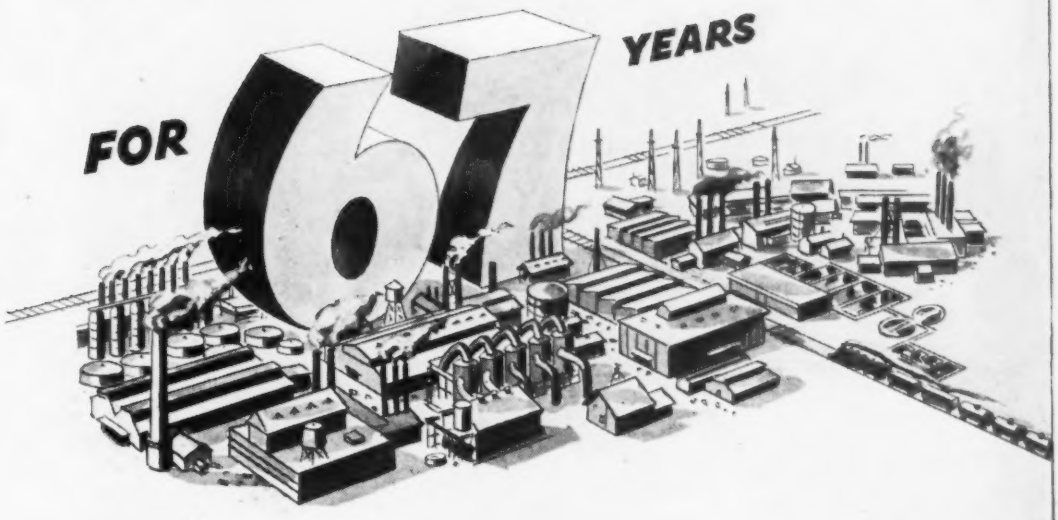
Warp Stop Motion

(*Continued from page 125*)

the wire when it falls into positive contact with the electrode bar and completes the circuit.

The design of motion A in Fig. 1 allows any reasonable number of bars to be clamped between section heads. Motion *B* requires change of electrode holders to build up from a small to a larger number of bars. On the latter, however, if an 8-bar holder is on the loom, it can be used for 2-, 4-, or 6-bar weave requirements.

Fig. 2 shows the C & K knock-off



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How to SLASH your SLASHING COSTS
WITH THIS NEW KIND OF TAPE
In one simple, speedy operation, this loaded beam is being prepared for transfer to the loom. "SCOTCH" Textile Tape is laid over and under the final lap of warp threads before and after slashing, holds threads in perfect alignment during transfer and in the subsequent tie-in at the loom.

You'll find you'll save money and time when you use "SCOTCH" Textile Tapes. Here's why:

• "SCOTCH" Tape holds to every thread instantly, firmly on contact. • "SCOTCH" Tape needs no moistening . . . it's quicker and easier to apply. • "SCOTCH" Tape strips off clean . . . leaves no adhesive on the threads. • "SCOTCH" Tape adhesive stays put . . . doesn't transfer to next layer of threads.

There are many ways "SCOTCH" Textile Tapes help you smooth out production rough spots. They bring speed and economy to Tricot knitting work . . . they're widely used to identify roving cans . . . they'll tab the last lap of cloth on a roll without leaving a stain or an adhesive residue.

You'll want to know more about these new textile tools. Address Dept. "P1" for complete information. Ask us to send a "SCOTCH" Tape Field Engineer to your plant. He can give you many new ideas on increasing production and slashing costs.

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motion. This arrangment is a positive improvement in warp stop motions. The timing cam can be set to stop the loom when the lay is at any desired position. On high-speed automatics, the single cam is best set so that the lay will stop with the shuttle in the drop-box side and the reed approximately 2 in. from the fell of the cloth. This point offers a suitable reed position for the weaver to splice the broken end and pull it through the harness without the need of taking off the brake and moving the lay forward for drawing in the end. A glance at the loom will usually tell the weaver whether stoppage is due to a broken end or to a filling fault, which observation saves a small margin of time. With the warp stop, the lay has been stopped far from front center, and on starting up, the weave will be free from starting marks.

TO SET STOPPING. A double cam is preferred by some, as the lay can be stopped on either side as soon as the drop-wire contacts and the cam setting raises the rocker lever. Substituting one for the other is merely a matter of replacing one type for the other. The single cam moves the rocker lever up and down on each revolution of the drive shaft; the double cam gives two movements for each revolution. As a result, with the double cam, the shuttle will be stopped in either box.

To time the position for stopping the lay, the cam is moved around on the drive shaft until the high spot is in the desired position. The loom should be tested for stoppage; and, if satisfactory, the cam stud may be firmly tightened.

While the loom is running, the only movable part functioning mechanically is the rocker lever. The knock-off tip moves in and out above the solenoid bar, ready for action as soon as a warp end breaks. When an end breaks and a wire drops, the circuit is completed, and the solenoid lifts the bar. At its extreme lift, the pawl drops down under the bar and locks it into position where the tip of the rocker lever will strike the tip of the bar. The knock-off lever is thus pushed forward; it then shoves the push rod connected to the brake rod, applies the brake, and shuts down the loom.

There should be about $\frac{1}{16}$-in. clearance between the knock-off lever and the solenoid box front. Too much clearance may prevent a quick stop; too little clearance may cause binding and give false stops. Either may result in broken or bent parts connected with the knock-off.

The mechanical action of the Rhode-Island motion is simple, but it is not possible to set it to a specified

IT TAKES GOOD YARNS . . . TO PRODUCE GOOD WOOLENS!

Good oil, applied at the right spots, can make your automobile run smoothly, efficiently, and economically. By the same token, a good wool oil, properly applied, can give you smooth, efficient, economical performance in your carding and spinning...safety in your scouring and dyeing.

PROXOL, Procter & Gamble's efficient new wool oil, will help you turn out strong, uniform yarns—the kind so essential for good, saleable fabrics. Here are 5 reasons why:

1 Proxol is self-emulsifiable.
This is true at any concentration. Proxol has a pour point of less than 20°F... easily emulsifiable in either cold or warm water. Requires no added emulsifiers.

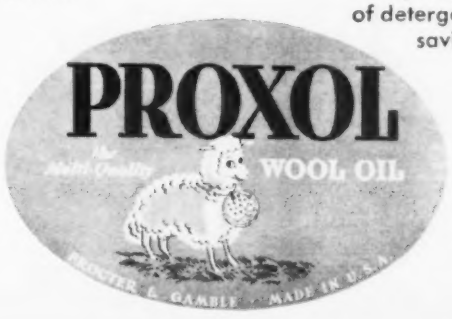
2 Proxol emulsions have small particle size.
The extremely small particle size of Proxol emulsions means quick, even spreading and thorough penetration.

3 Proxol assures efficient carding.
Card ropings are smooth and uniform. Proxol is anti-static, non-corrosive . . . consistently produces less than normal waste. Does not gum up card clothing. Stripping is reduced.

4 Proxol provides exceptional lubrication.
Fiber breakage is held to a minimum . . . fewer ends down in spinning. You get more production, improved yarns, better fabrics with Proxol.

5 Proxol scours easily.
Residual oil after scouring is extremely low, assuring uniform dyeing and finishing. Furthermore, 40% to 75% reductions in the amount of detergents normally used make substantial savings possible.

You'll revise all your previous ideas about wool oil performance when you try Proxol. Right now is the ideal time to prove this to your own satisfaction.



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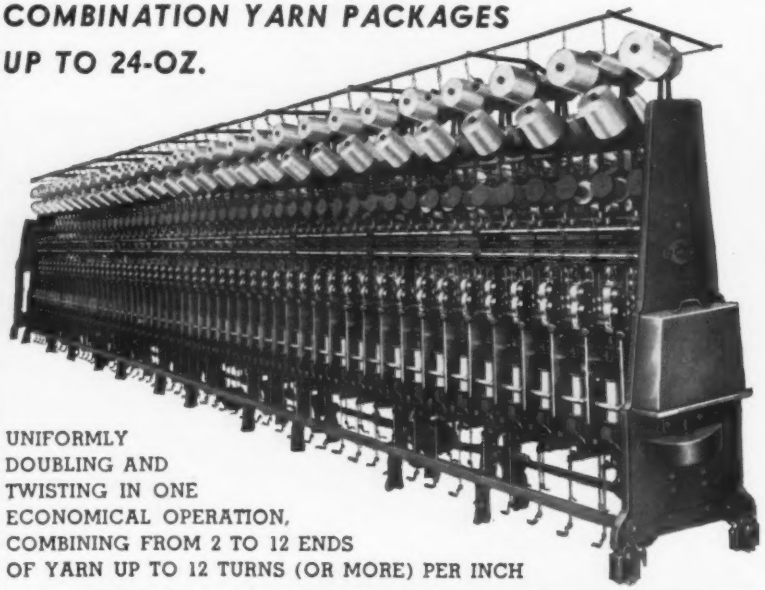

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CONSTANT SPINDLE SPEED—80 to 110 individually controlled spindles (plain or roller bearing) accurately tensioned to driving belt!

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COMPLETELY HOUSED twist unit and back idler prevents yarn spoilage from leakage of lubricant!

QUICK-TO-CHANGE TWIST GEARS—only one gear to change for each given twist!

NEW, OPTIONAL, STATIONARY RING HOLDER eliminates ring vibration and handles heavier denier yarn without ring hesitation in the downward stroke!

MODERN THROWING EQUIPMENT FOR PROFITABLE PRODUCTION

• Cuts Operating Costs • Boosts Production & Quality • Reduces Maintenance

WRITE FOR ILLUSTRATED BULLETIN!

U.S. TEXTILE MACHINE CO.

600 Gilligan St.—Scranton 8, Pa., U.S.A.

position as readily as the motion just described. Usually, the solenoid box is positioned on the loom frame directly below the arch; and when the drop-wire falls onto the drop-wire bar, circuit is made and the electrode draws the knock-off dagger up to engage a fixed V-stud fastened to the reed hanger. As action develops, the knock-off lever shoves the push rod against the rolling brake rod, thus stopping the loom. If the knock-off dagger is too long, it may become locked in the V-stud and cause considerable trouble in releasing the brake. If the dagger is too short, it may fail to knock off or action may be retarded for several picks.

Efficient functioning of any type of warp stop motion requires attention by weavers and fixers. Even though there is little to get out of order, breakdowns must be corrected as quickly as possible. If warp ends break and the loom fails to stop, the fixer should be notified. On warp-outs, all lint and oil should be cleaned away from the various parts. On new remounts, as soon as the cloth has been woven a few inches and the missing ends placed and loom readied for running, the individual electrode bars should be shorted in checking for stops. A fixer can stand in the front loom aisle and reach over the moving harness with a long screw driver and short the bars. Each bar should be tested.

On the check-up, test the lay stoppage for position. If too far from the cloth fell, time to stop the desired 2 in. If too close, move back.

COMBINATION IDEAL. The writer can see advantages in combining the best features of the two electric warp stop motions just described. The Crompton & Knowles timing cam, solenoid, knock-off, and switch assembly used in association with Draper's drop-wires, solenoid bars, and brackets offer a combination that would be difficult to surpass.

With the combination of the best from these two electric warp-stop motions, one can have:

1. The lay stopping at any desired position for any weave.
2. A switch combination that is small, quick, and trouble-free.
3. A dependable solenoid unit.
4. An easy-to-adjust knock-off unit.
5. Simply designed, long-life electrode bars.
6. Drop-wires that drop easily.
7. Simple electrode holders that are easy to adjust for position.
8. Electrode bar holders that allow quick, easy placement of all the bars to a predetermined spacing.

There are various types of switches for opening or closing the circuit used

ORATOL L-48

A Feature to Remember!

ORATOL L-48 MAKES A GOOD BASE FOR DYEING

The problem in dyeing is to secure maximum penetration, quickly . . . level results with the most delicate shades . . . with no waste time or added expense.

Oratol L-48 is a powerful detergent . . . with high foaming, emulsifying, and wetting properties . . . and quick-as-a-flash scouring action. As a dye-bath assistant, Oratol L-48 is stable in hard water and performs equally well on all types of fibres — under acid or alkaline conditions.

What this means to you:

1. Quick, thorough penetration
2. Greater assurance of level dyeing
3. Fewer redyes . . . fewer rejects
4. Greater output . . . greater profit

Oratol L-48 has other important advantages: It is not affected by metallic salts. It acts as a dispersing agent for lime soap deposits. It rinses rapidly, requires less water, improves fabric hand.

Ask our representative about economical Oratol L-48. Or write, today, for technical data and your generous free sample for testing.

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Plants: Passaic, Carlstadt, N. J.; Los Angeles, Calif.

Warehouses: Providence, R. I.; Philadelphia, Pa.; Utica, N. Y.; Chicago, Ill.; Greenville, S. C.; Chattanooga, Knoxville, Tenn.

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JACQUES WOLF & CO. *Chemicals* PASSAIC, N. J.

For A Quick Start After Shutdown

Protect your yarns with

Walton

HUMIDIFICATION SYSTEM

Production lost in starting up machines in the morning, or after week-end or holiday shutdowns, is never recovered.

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All day, and every day, even after shutdowns this simple, controlled humidifying system permits of maximum production, free from broken ends and other troubles that result from dry, static-laden air.

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These features of Walton Humidifiers will save you time and money:

- Walton Systems incorporate self-contained units — as required for each individual installation. There is no waste or idle capacity.
- Units can be placed anywhere that humidity is desired. Only water and electrical connections are required.
- Distributing domes on each unit send out fine vapor in all directions, or distribute it in any way you wish.
- Filter-type models are available to remove lint externally, without interference with normal operation.
- No wet spots are formed under or around the units. The vapor discharge is completely absorbed by the surrounding air.
- Operation is automatically controlled to maintain any desired relative humidity.
- Installation is a matter of a few hours, presenting no technical problems. Units are factory assembled.
- The reasonable costs will please you as much as the positive results.

WALTON LABORATORIES, INC.,
Irvington 11, New Jersey

Please send me a FREE copy of your informative, illustrated booklet "Industrial Humidification."

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CITY..... STATE.....

Please refer to T.W. 12-48

on electric stop motions. An improved transformer unit is available with thermal control for protection. Should a short circuit occur, or for some other reason continuous current endanger the transformer, the thermal unit will open the circuit.

High-Temperature Dyeing

(*Continued from page 119*)

being increasingly used. Stabilization and crush proofing of fabrics is a definite trend; for example, resin finishes applied to cotton.

Maintenance of level and temperature is important for uniform impregnation when caustic-soda or peroxide saturators are used in bleaching. The latter type needs to provide less pick-up than the former as fabric enters the steamer (50 to 60% compared to 90 to 100%).

Many controls are needed in a modern finishing plant. Photo cells or other means are used to keep goods slack. Recording steam flow meters help prevent overdrying or overcuring. High prices of fuel make heat reclamation more feasible than ever.

An effort has been made to combine both peroxide bleaching and sodium hypochlorite or activated chemic bleach in the same range. A new chemical bleach may greatly reduce bleaching time. A new continuous open-width boil-off consists of a caustic saturator and an inclosed steam box with heated top, bottom, and sides. Steam and hot-water sprays are combined in it. Another scour-and-bleach unit uses a series of small open J-boxes totally enclosed in a steam atmosphere. High-temperature desizing with enzymes is being carried out as routine.

Liquid sulphur dioxide and solid carbon dioxide have proved useful in caustic-soda neutralization in bleach ranges. In dyeing, short-volume, high-temperature reduction baths are being studied, as are chemical stabilizers and auxiliaries.

A new piece of equipment for high-temperature dyeing of vat colors consists of an impregnation pad, a booster box, and a steam chamber. It uses water-cooled rolls. Continuous chemical feeding coupled with automatic titration shows promise.

The Effect of Temperature on Finishing Compounds

By ARTHUR H. NOBLE, JR.,
Arnold, Hoffman & Co.

No discoloration, development of odor, or scorching trouble should result from mill use of sulphated olive-oil substitutes at pH values of 6.0 and 9.0. While some discoloration occurs if the sample is treated with a high concentration of one of these oils and exposed to high temperature for a long period of time, in normal mill practice no such discoloration is likely to occur.

It requires about 15 min. exposure at 350° F. to discolor an olive-oil substitute. A temperature of 400° F. is required to scorch the finish. At lower temperatures no damage is likely to occur. Unless high

HOW MUCH MONEY CAN NEW DU PONT "LUDOX"

☐ save you? ☐ earn you?

Already... many textile men are using this new Du Pont chemical to improve fabrics ... speed production

Whether you are processing natural or synthetic fibers or fabrics, chances are that the new Du Pont "Ludox" Colloidal Silica can help you produce better goods, expand sales with new products or increase production.

Offers new economies and applications

"Ludox" now comes to you as an aqueous 30% colloidal solution of almost pure silica particles, each having a size less than 1/1,000,000 of an inch. It is chemically reactive, highly fluid and substantially free of alkali. This new high concentration gives "Ludox" a much broader range of usefulness—with maximum economy.

Checks fiber slippage

Textile men have already reported excellent results in treating both fibers and fabrics with "Ludox." It has been found, for example, that "Ludox" checks yarn and fiber slippage by increasing fiber-to-fiber friction, and that the increased friction also strengthens the yarn and permits lower twist. This helps increase production, as well.

Many other uses

Others are using "Ludox" to improve sizes and coatings for added bond and film strength, increased friction and water resistance, and less dry tackiness. "Ludox" also has a mild delustering effect on rayons. It has a minimum stiffening effect on the fabric and is not dissolved by dry cleaning solvents. Users are finding *new* ways of applying "Ludox" to their advantage.

Do you have a slippage problem? "Ludox"-treated fabrics, like this rayon, show outstanding resistance to yarn and fiber slippage.

How can "Ludox" help you? A Du Pont Technical Service man will be glad to visit your plant and study your problems.

Get these helpful facts

Clip the coupon below for your copy of our Technical Bulletin on "Ludox."

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BETTER THINGS FOR BETTER LIVING
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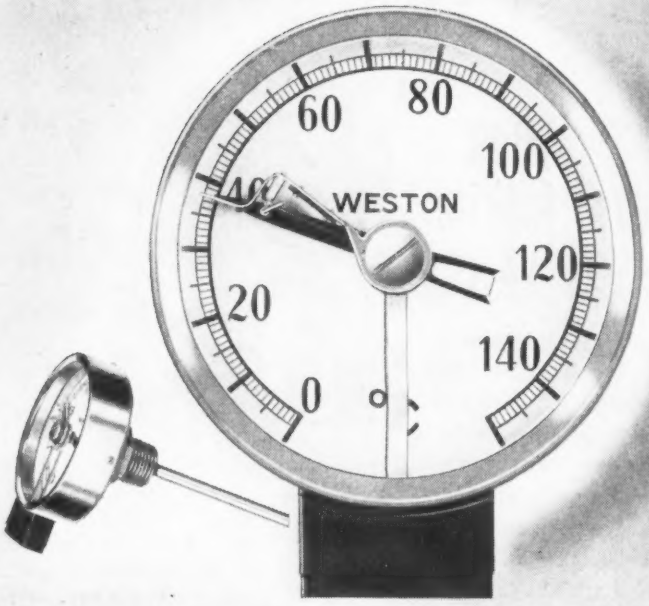
NEW –

all-metal WESTON *Contact-making* thermometer



This new Weston combines the features of an indicating device with the advantages of an alarm or control instrument. A contact arm, mounted as shown above, is easily set to make contact at any temperature on the scale.

A terminal block on the periphery of the case makes electrical connection easy. The thermometer is all-metal, typically WESTON in ruggedness and reliability, with accuracy of ±1% as an indicating thermometer, and ±1½% as a contact making device. It is supplied in two types—for operation on either increasing or decreasing temperatures.

For complete information see your local WESTON representative or write Weston Electrical Instrument Corporation, 617 Frelinghuysen Avenue, Newark 5, New Jersey.

Industrial Thermometers | MAX-MIN Thermometers | Contact-making Thermometers

WESTON *Thermometers*

temperatures are used, it should be safe to use this class of oils.

Drying temperatures up to 280° F. will not damage sulphated castor oils. Concentration of 3 to 5% will yellow if exposed to a temperature of 300° F. for 5 min. The discoloration is greater at a pH of 9.0 than at 6.0. Exposure at 158°F. for a period of 14 days results in yellowing and development of odor. Scorching is noticeable at 300° F. The conclusion is that the use of this type of oil should be avoided in finishing compounds.

Soybean oil reacts in a manner similar to that of castor oil. Scorch resistance is about the same for both types of oil. Soybean oil shows less tendency to yellow under ageing but develops more odor. Generally, the use of soybean oil also should be avoided in finishing.

Sulphated tallows and fatty-acid softeners are highly scorch resistant, but discoloration occurs at temperatures above 300° F. At exposures below that temperature for a period of time up to 15 min., no trouble should be encountered. Development of odor in the tallows was not noticeable. For general mill conditions, the use of this class of compounds is safe.

Cationic substantive softeners are less resistant to heat than are anionic softeners. Some discoloration occurs at 300° F. and below. At higher temperatures, the yellowing is pronounced; and at 350° F. scorching occurs. They do not develop odor when tested in the same manner as the other products.

Anionic substantive softeners are safer to use than the cationic. They have good resistance to yellowing, scorching, and development of odor.

Weighters tested for response to heat included Epsom salts, urea, urea and salt mixtures, urea derivatives, and sugars.

Epsom salts do not yellow, scorch, or develop odor.

Sugars do not develop odor but are extremely sensitive to heat so far as yellowing and scorching at 300° F. and above. The discoloration increases with rise in temperature and longer exposure. They must be used cautiously.

Urea and urea mixtures do not discolor at temperatures up to 375° F. No rancidity occurs normally, but ammonia was given off when the samples were stored in a closed bottle for 14 days at about 148° F.

Textile-Printing Techniques

By FRANCIS S. RICHARDSON,
Waldrich Co.

Experimental work on photographic printing has resulted in repeats of patterns 4 ft. by 16 ft.; in drapery materials 9-ft. lengths, however, are more customary. Limitations to photographic printing are that they usually consist of only one or two colors (second color being obtained from the color of the cloth), range of depth is limited, and shades are difficult to match.

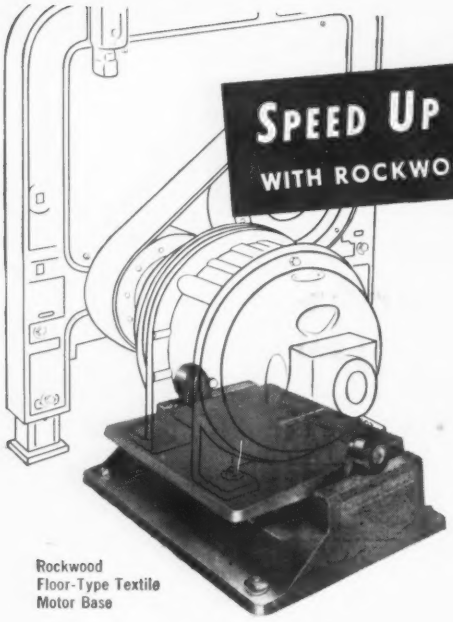
Offset printing, similar to offset printing used on paper, has been practiced abroad for 20 yr., but is just now being established in the United States. Usually four offset rollers are used: red, yellow, blue, and black or brown. The method is quite

Textile Detergent Operations

OPERATION AND FIBER	PURPOSE OF OPERATION	DETERGENT PROPERTIES REQUIRED	DETERGENT RECOMMENDED
KIERBOILING Cottons	To remove natural waxes, motes, pectins and soil; to improve absorbency	Rapid penetration and/or soil removing and suspending action	Certified Flint *Regal *Energetic
BOIL-OFF 1. Cotton	To remove natural waxes, motes, pectins and soil; to improve absorbency	Rapid penetration and/or soil removing and suspending action	Certified Flint *Regal *Energetic
2. Synthetics including hosiery	To remove spinning oils, sizing compounds and soil	Good detergent action; in some cases leveling properties	Certified Flint Giant *Energetic *Triumph
CONTINUOUS BLEACH Cottons	To remove natural waxes, motes, pectins and soil; to improve absorbency	Rapid penetration	*Regal
DESIZING Cottons	To remove size	Rapid penetration and wetting action	*Regal
SCOURING 1. Raw wool	To remove grease and dirt	Good detergent properties. Easy solubility and rinsability	Re-Nu Texscour Certified *Triumph *Regal
2. Wool piece goods and yarn	To remove spinning oils and soil	Oil emulsification	Texscour Certified *Regal
DYEING 1. Cottons	To improve dye penetration and leveling action	Stability to acids often necessary	*Regal *Energetic
2. Wool	To perform leveling action	Dye suspending action; stable to acid	*Energetic
SOAPING 1. Cottons dyed	To remove excess dye; bringing up color	Maximum detergent action	Flint *Triumph *Energetic
2. Prints	To remove gums, starches, etc.	Maximum detergent action	Flint *Triumph *Energetic
FULLING Wool	To aid in fulling operation and scouring	Good lubricant properties	Flint Certified
FINISHING 1. Cottons	To apply a soft hand to goods	Low titer; freedom from rancidity	Certified Texcour
2. Synthetics	To provide scroop	High titer; freedom from rancidity	Flint

*Synthetic detergent

Additional copies of this chart, and full information on any product may be secured from ARMOUR AND COMPANY, Industrial Soap Division, 1355 W. 31st Street, Chicago 9, Illinois.



Rockwood
Floor-Type Textile
Motor Base

SPEED UP PRODUCTION
WITH ROCKWOOD PIVOTED MOTOR DRIVES

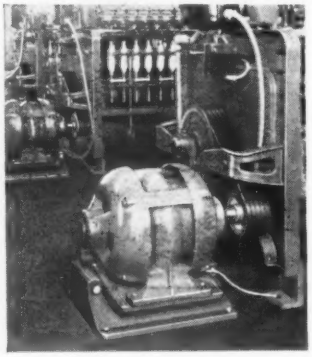
● COMPLETE FLAT-BELT DRIVE

A few of the many Rockwood Floor-Type Bases with Rockwood pulleys used by Henderson Cotton Mills, Henderson, N. C.

AUTOMATICALLY MAINTAINS CORRECT BELT-TENSION *all the time*

● Rockwood Pivoted Motor Drives make it possible for you to run your machines at just the right speed, and keep them there day after day, despite belt-stretch or load-change. They start machines quickly and smoothly, cut your power costs 5 to 10%, usually double belt-life. No slow-downs or time-outs for adjustment. Motor bearing wear is reduced to a minimum. Product quality and uniformity are assured. Rockwood Pivoted Motor Drives are quickly and easily installed . . . and you can get complete service, including famous Rockwood Paper Pulleys with unequalled grip, Rockwood Sheaves, and Rockwood V and Flat Belts. Write for full details today or call your Rockwood distributor!

● COMPLETE V-BELT DRIVE



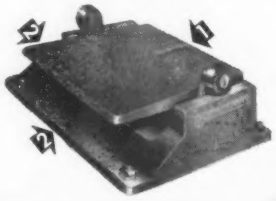
These Floor-Type Rockwood Bases speed production in the South Fork Manufacturing Company's mill at Belmont, N. C.

ROCKWOOD REVUE

(Presenting each month a few of the many features you'll want in your Pivoted Motor Drives. ONLY ROCKWOOD HAS THEM ALL!)

1. Two-piece, sliding arm construction for proper motor location, using less room, eliminating dangerous projections.

2. Heavy rigid cast-iron construction that will not bend or flex under load.



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ROCKWOOD PIVOTED MOTOR DRIVE

immediate delivery!

Rockwood's expanded manufacturing facilities now assure delivery immediately, or according to any delivery schedule you determine!

useful for full-color reproductions. Colors tend, at present, to crock but are suitable for drapery material. To date, proper registration has been a problem.

The Swiss Orbliss process uses a printing roll built up with color and gum in a predetermined pattern. The pattern is transferred by running cloth against the roll. Yardage that can be printed usually does not exceed several hundred yards with a roll. Exact reproductions are not obtainable; the size of the roll is gradually reduced.

Marbleized patterns can be achieved by a flotation process, called Sallada for its developer. Colors, in a medium which will float on an aqueous paste, are dispersed to produce swirls; and cloth is brought into contact with the surface of the bath. Pigment and napthol colors have been used quite successfully.

The Colloresine process, a method of roller printing vat colors, involves printing a vat pigment in a gum after which the fabric is dried, padded with a solution of alkali and hydrosulphate, and aged. The method is quite good for blotch patterns. Many vats that cannot be printed in the usual manner can be successfully employed by this process.

Application of Leuco Esters of Vat Dyestuffs to Wool

By DR. HANS LUTTRINGHAUS,
General Dyestuff Corp.

All leuco esters are beginning to find increased interest from woolen and worsted manufacturers, due to demands for better fastness of wool fabrics, particularly shrink-resistant types.

While leuco esters are sensitive to acid, they can nevertheless be used in an acid bath at high temperatures. They act similarly on wool to true acid dyestuff, exhausting faster with increasing strength and amounts of acid.

Today, mainly tone-in-tone dyeings are being attempted with leuco esters on mixed-fiber fabrics; but cellulosic fibers can be left white, if desired.

Textile Printing, Skill or Mystery

By ELLIOT BROADBENT,
Glenlyon Print Works

A major reason for printers' troubles is the need for fitting patterns requiring fine tolerances on equipment in which tolerances are gross.

After engraving, rolls are still polished by means of a hand stone, whereas machine polishing (such as used in Europe) is more accurate and preferable.

Printing machine cylinders have a slight crown to compensate for bending of the printing rolls; and, in addition, the printer puts on a few center packs. The windings must be varied according to the pressure required—and that pressure may change from set to set. In addition, the lappings start off by being relatively spongy but harden upon use. The printer must make compensations for all these changes, compensations depending on skill rather than on any standardizations.

Many problems associated with com-

Hooker Chemicals for Textiles

If you are interested in bleaching, dyeing and finishing textiles, Hooker can supply many of the chemicals you need. Your work will be made easier, your operations will run smoothly and your product will be of uniform high quality when you use Hooker Chemicals.

Careful control combined with specially developed manufacturing techniques of Hooker Chemicals assures you of uniformly high quality in every shipment to your plant.

Listed below are some of the Hooker Chemicals that are serving the dye and textile industries. These and many others are listed in the Hooker General Products List, Bulletin 100. Technical data sheets are also available describing each product more completely. Just write "Bulletin 100" and the names of any products on which you would like more information on your letterhead and sign your name. The literature you want will be on its way by return mail.

PRODUCT *Chemical Formula: Molecular Weight*	**HOOKER SPECIFICATIONS**	**SUGGESTED USES**
Aluminum Chloride Anhydrous $AlCl_3$; 133.3	Aluminum Chloride....98.5% Min. Iron....0.05% Max. Non-sublimables in air at 950°C, 1.5% Max.	Catalyst in synthesis of dyestuffs and intermediates.
Benzoic Acid-USP and Tech. C_6H_5COOH; 122.1	Benzoic Acid....99.3% Min. Water....0.2% Max.	Manufacture of dyes. Mordant.
CP—70 $C_{24}H_{29}Cl_{21}$; 1063	A chlorinated paraffin resin in powder form. Soluble in aromatic solvents, difficultly soluble in mineral spirits. Chlorine....71 ± 2% Iron....0.1% Max. Softening range....90° to 100°C	Treating textiles to make water, fire and mildew-proof.
Lauryl Pyridinium Chloride $C_5H_5N(C_{12-6}H_{26-2})Cl$; 292.0	Mottled tan, semi-solid. Solubility in water is 60 gms. per 100 gms. of water. Alkyl Pyridinium Chloride (Calc. as C_{12})....85.0% Min.	Cationic detergent. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing.
Orthodichlorobenzene $C_6H_4Cl_2$; 147	Clear, colorless liquid. Freezing Point....—10° to —22°C Boiling Range....6° including 179°C	Manufacture of pyrocatechin, dye intermediates, other synthetic organic chemicals. Degreasing wool.
Sodium Sulfhydrate NaSH; 56.1	NaSH....70 to 72% Fe....5 ppm Max. Na_2S....0.25 to 2.5% NaCl....0.4 to 0.8% Na_2SO_3, $NaHCO_3$....0.04 to 0.4% Cu, Ni, Cr, Mn, Pb....1 ppm Max. Water of crystallization....28 to 26%	Desulfurizing rayon; calico printing; in sulfur dye baths.
Sodium Sulfide Na_2S; 78.1	Na_2S....60 to 62% Fe....8 ppm Max. NaCl....1.5% Max. Other Na Salts....2.0% Max. Cu, Ni, Cr, Mn, Pb....1 ppm Max. Water of crystallization....36.5 to 34.5%	Desulfurizing rayon; calico printing; in sulfur dye baths.

HOOKER ELECTROCHEMICAL COMPANY

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Caustic Soda Chlorine Muriatic Acid Paradichlorobenzene

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of filament, spun rayon, and nylon yarns.

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pensating for backgray changes might be solved by use of wash blankets instead, or of continuous washing of backgrays. Problems of paste consumption could be helped by some standardizing depth of engravings.

To avoid changing, confine specific machines to particular grade and type of patterns; perhaps several different kinds of printing machines might be needed, just as many types of dyeing machines are used.

Hosiery Problems

(*Continued from page 129*)

dyes in shades of red and scarlet and vat dyes in a wide range of colors are being used successfully by several mills.

Because most hosiery-mill dyehouses do not have a ready supply of ice, the use of naphthol colors is limited. One advantage of these dyes is that they are easily cleaned up on hosiery.

To apply them successfully, a good supply of soft water should be available and care should be taken in dissolving the naphthol preparation. Preparation AS-SW, the naphthol form most commonly used, gives good penetration and permits raising the temperature of the bath in order to control exhaustion.

Light spots sometimes result from the dye salt not reaching the preparation liquid in the cold coupling bath. Often these spots are attributed to poor penetration quality of the dye; but the defect can be eliminated by raising the temperature of the bath to 130° F. for a few minutes after the coupling has been completed.

A good formula now in use is made up by pasting AS-SW with alcohol and dissolving it in a caustic-soda solution. With caustic soda and a penetrant in the dye machine, add the AS-SW solution and run the hosiery in the bath for 20 min. at 130° F. At the end of 20 min. add 20% salt, and run the hosiery another 20 min. Drain off the bath and give the goods three cold salt-water washes to remove the caustic.

Dissolved dyestuff is added to a 20% salt bath, and the goods run in it for 30 min. The machine is then drained and the goods washed cold and soaped twice with 2% synthetic detergent and 1% soda ash. The goods are then washed at 160° F., cooled, and softened.

In dyeing mercerized hosiery with vat colors, trouble from inadequate penetration of the heel is often encountered. Fine-gage or close-knit coarse-gage hosiery can be dyed better in a revolving dye machine than in an open paddle-wheel tub, because the force of the revolving machine gives better penetration of the hosiery heel. However, some mills are satisfactorily dyeing fine-gage hose with vat dyes on the paddle-type machine.

The water ratio of a vat-dye formula should be 15 to 1. For dyeing in a revolving machine, the bath should be prepared in the machine at 200° F. by adding to the water: (1) the dispersed dyestuffs, (2) 10% dissolved caustic soda, (3) retarding agent, and (4) penetrant.

Place the dry hosiery in the machine

Southern Sizing Company

P. O. BOX 167, ATLANTA, GEORGIA

Announces the Appointment of

Bryant Chemical Corporation

Textile Consultants and Manufacturing Chemists

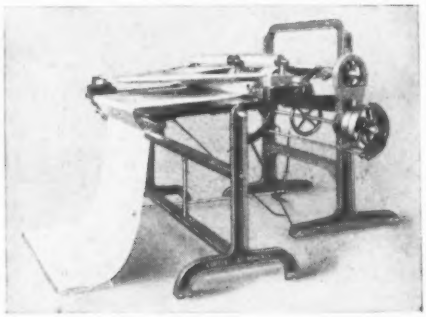
6 NORTH ST., NORTH QUINCY, MASS.

as their Northern Agent for the Manufacture, Sales and Servicing of

SLIX is the registered trade mark for the new type warp lubricant designed for application separately from the starch film under the process patented in the U. S. Patent No. 2,074,745.

SLIX imparts surface lubrication to the shuttle and other loom parts which effects a marked reduction in warp stops — and more amazingly, a similar reduction in filling stops. Increased production and improved quality are obtained by the greater weavability afforded starch-sized warp yarns.

SLIX, a milk-white emulsion of high melting point fats and fatty matter, completely fills all the requirements of preservation, mildew-inhibition and hygroscopity. Combined with the feature of being more easily removed in the desizing operation because it is hot water extractable, SLIX is proving the ideal one-piece liquid sizing for cotton and spun rayon yarns.



Doubling and Winding Machine

For doubling cloth neatly and evenly lengthwise so as to bring the selvages together, and at the same time measure it and wind it in a package for the market. Can be fitted to wind the doubled goods on flat cardboards or round paper tubes. Recommended for cottons and rayons.

Ask us more about it!

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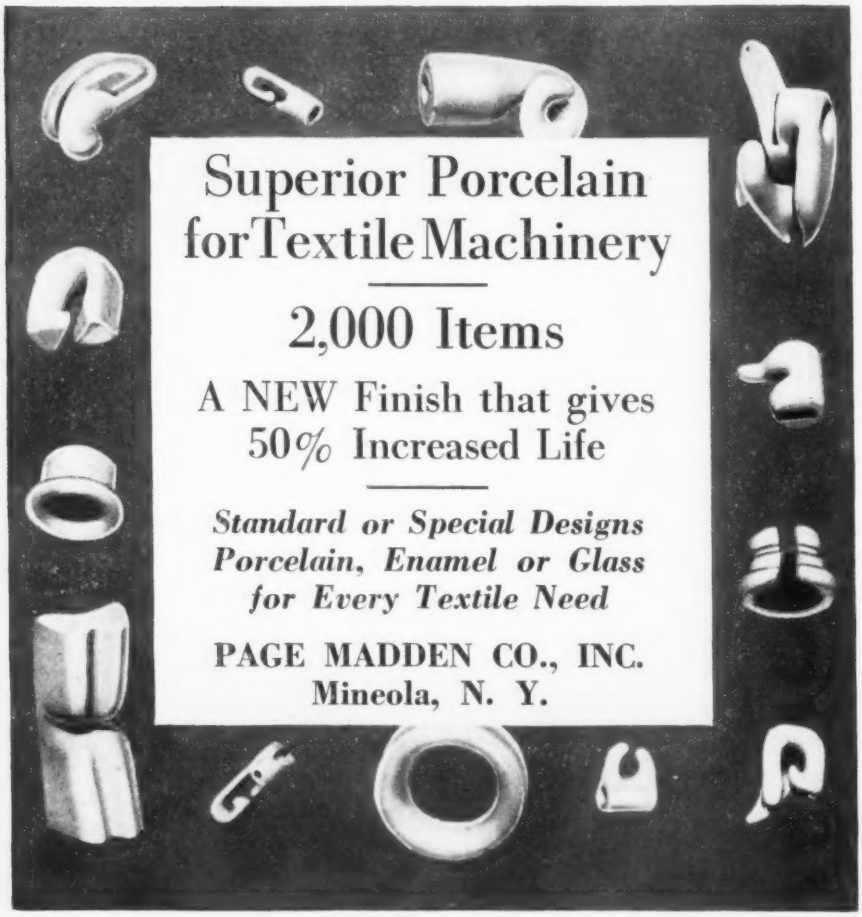
MACHINE COMPANY
WORCESTER, MASSACHUSETTS.



and run the goods for 25 min. Adjust the temperature to 190° F. and add 10% sodium hydrosulphite over a period of 10 min. Run the goods 5 min. longer. Overflow the machine with cold water until the caustic soda is removed. Add 1½% sodium perborate and heat to 160° F. Now add 1% soda ash and 1% synthetic detergent, and heat to a boil. Boil the goods 10 min., wash at 160° F., cool, and soften.

For dyeing in a paddle-tub dyer, add to the water at 200° F. the following: (1) 5% dissolved corn sugar, (2) dispersed dyestuffs, (3) 10% dissolved caustic soda, (4) retarding agent, and (5) penetrant.

Load the goods in the machine, run 30 min., and adjust and hold the temperature at 180° F. Add 10% sodium hydrosulphite over a period of 10 min., and dye for 15 min. more. Add 2% more sodium hydrosulphite over a period of 10 min., and dye for 15 min. more. Add 2% more sodium hydrosulphite, and dye 3 min. Overflow the tub with cold water to remove the caustic soda. Add 1½% sodium perborate and heat to 160° F. Add 1% soda ash and 1% detergent, heat to a boil and hold at a boil for 10 min. Wash at 160° F., cool, and soften.

In practice, differences in shades of hosiery dyed in the same bath often result. Two steps recommended to combat this condition were:

1. Change the combinations of dyestuffs being used.

2. Add the 10% sodium hydrosulphite more slowly. There may be a tendency of the operator to dump the hydrosulphite instead of adding it gradually and steadily.

Dirty, smudgy socks are often caused by improper selection of dyestuffs. Colors with black bases or shades and khaki 2G in all shades have a tendency to yield such results. The dullness is caused by too-rapid exhaustion. If the condition is present with other shades, closer control of exhaustion is needed.

Finishing Terry Towels

(*Continued from page 117*)

safety. These routines briefly are as follows:

MAINTENANCE RECORDS. Maintenance cost is under constant scrutiny. Each machine in the department is numbered, and a record of maintenance on each machine is kept by means of a Kardex filing system. When a part is requisitioned for a machine, the machine number, part number and cost, and the name of the machine operator are recorded. By keeping this record up to date, one can determine quickly what the cost of replacement parts was for a machine for any given period of time. The record also indicates the excessive use of a particular part by an operator and serves as a guide in determining which machines should be replaced first.

Inspections of the physical condition of the department are made peri-

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Sterling Ring Travelers

ENGINEERS

Do you take the time to talk with them when they call? Can they go into your mill? They have a vast fund of all kinds of practical information available for the asking. Some day, to you or your men, this might prove invaluable.

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D. R. IVESTER, Box 882, Clarkesville, Ga.
J. S. FURTADO, Box 803, Fall River, Mass.

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

odically by the foreman and representatives of the insurance companies, but more frequent inspections are necessary in order to maintain good housekeeping, prevent fires, and avoid machine breakdowns and loss of production. All machines and motors are inspected weekly, and repairs necessary to avoid breakdowns are made at once. A departmental inspection is also made by the foreman during the week end.

An active safety program is a significant part of departmental operation. An honorary certificate was recently awarded the finishing department by the American Mutual Liability Insurance Co. for operating two years—over 950,000 manhours—without a lost-time accident.

The departmental safety committee is headed by the foreman and assistant foreman. The department is divided into five groups, each headed by a leader. In addition to various duties such as constant inspection, each leader also instructs new members in his group. Twice a year the leaders are rotated.

Once a month a departmental safety meeting is held, and the members cite hazards in the department and discuss ways and means of overcoming them and of improving the safety program. Perhaps one of the chief advantages of such a program is that workers who serve on the committee become more safety conscious themselves and tend to make others so.

Tagged Atoms

(*Continued from page 108*)

been used with the goods and might remain in them; (2) lack of well-developed knowledge of what would happen to the tagged atoms in a process; (3) liability to damage suits from consumers such as have in the past developed in connection with alleged dermatitis from some fabric finishes and in connection with alleged excessive fire hazard involved with some fibers or cloths.

Experimentation, proper isotope selection, and consumer education might overcome those objections. The fact that irradiated materials retain their effective radiating powers for various lengths of time is important in the selection of the tagged atom. In a certain unit of time, a radioisotope will lose half of its radiation; in the same unit of time it will lose half of what is left, and so on to infinity. This "half-life" period varies widely from about 19 sec. for carbon 10 to 5,100 years for carbon 14, or 1,000,000 years for chlorine 36. Theoretically, there would always be radiation left in a given sam-

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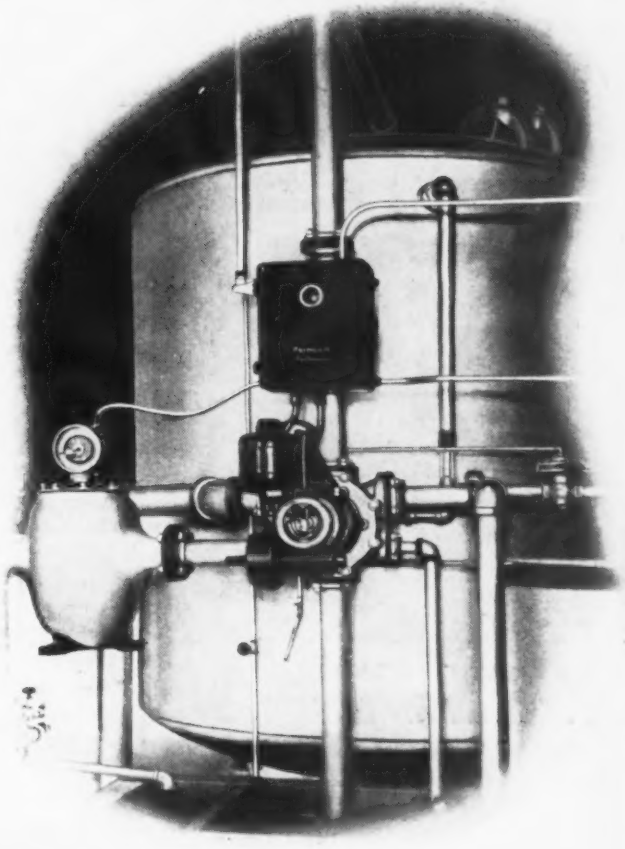

Have Permutit modernize your water softener . . .

AUTOMATIC—Permutit, with its multi-port valve, will rebuild a manually regenerated unit into an electrically controlled, fully automatic water softener. Permutit's electric-automatic controls guarantee a constant supply of zero water!

GREATER CAPACITY—Permutit, through 35 years of intensive research, has greatly increased the exchange capacity of its zeolites. In many cases, present day Permutit ion exchangers will double and triple the capacity of your water softener.

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Permutit's low-cost water softener reconditioning saves many man hours, yet increases both the quality and supply of softened water.

Have Permutit engineers analyze your present water softener without obligation. Their recommendations will mean extra profits! Write to The Permutit Company, Dept. TW-12, 330 West 42d St., New York 18, N. Y., or to the Permutit Company of Canada, Ltd., Montreal.

Permutit

Water Conditioning Headquarters for thirty-five years

Series 6 of typical "H-W" CONDITIONER applications

BERNSON SILK MILLS Inc. *Reports:*

"Most Satisfactory Results" from use of the "H-W" CONDITIONER

"We wish to take this means of expressing to you our gratitude on the excellent performance and the results obtained since we have our own installation of the "H-W" Conditioner that was erected at our plant last week.

View of "H-W" CONDITIONER installed in mill of Bernson Silk Mills, Inc., Buena Vista, Va.

"The general reaction throughout the plant has been one of considerable better feeling as the results obtained have been so much better than what we have experienced without properly conditioned yarn.

"It is amost a physical impossibility to obtain Quality and Efficiency without the use of properly conditioned yarn.

"We can add, that we were anxiously awaiting the erection of this Conditioner because we knew the results would be most satisfactory."

Very truly yours,
BERNSON SILK MILLS INC.
GERSON J. BERNSTEIN, *Vice Pres.*

Full particulars in Bulletin UC-1, upon request.

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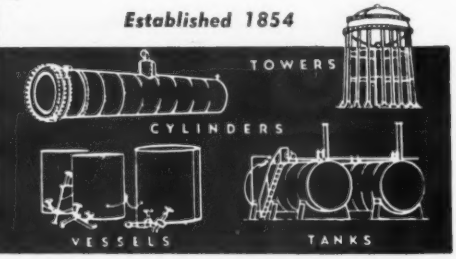


pic; but practically, when division by two has occurred a substantial number of times, there is little left to worry about in most cases where properly calculated selection has been made.

As the first to start, the medical and biological experiments with tagged atoms are furthest along. Investigations of how plants build up the more complex molecules of the food we eat, which plants produce energy-rich compounds in their early stages of growth, what happens inside the body to the food we eat or to the drugs we may take, definite location of tumors, etc., are all things on which new light has been shed by tagged-atom experimentation. This research tool has been vital in this field. For the first time, the activity of living tissue can be watched and calculated while it works. Before the tagged atom, most tissue was examinable only when dead.

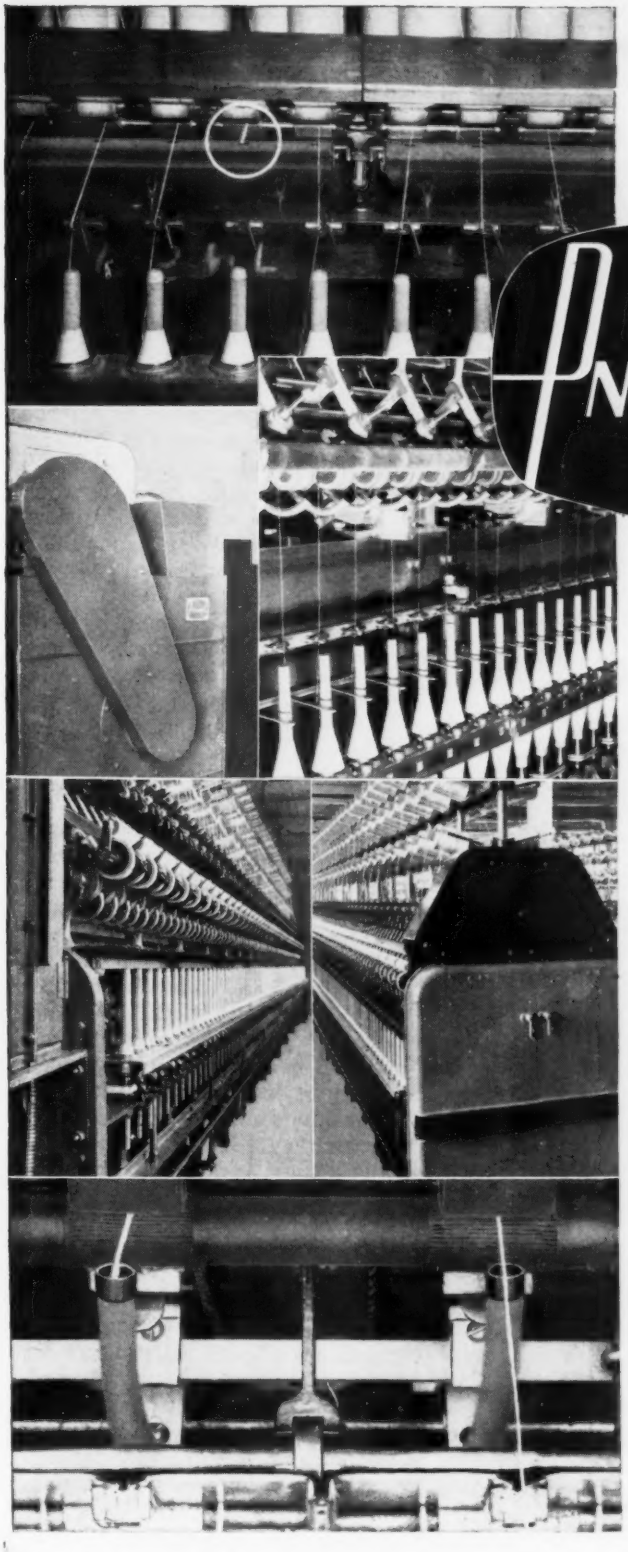
The industrial field may be equally fruitful; but at the present stage, the surface has barely been scratched in the application of tagged atoms to industry's many and varied problems.

A recent AEC report says the potential application of isotopes to the work of industry for the control of processes, the testing of products, and the development of entirely new processes and products is an open field of opportunity; it is the kind of field that American competitive industry is uniquely fitted to develop.

One fact that slows an otherwise rapid development is present lack of trained personnel. The fields where scientific research was already most advanced are the fields where greatest progress has been made with tagged atoms in the two years during which they have been readily available—medicine, biochemistry, pure physics and chemistry, metallurgy, petroleum products, etc.

To prepare the needed personnel, educational programs in nuclear physics are under way in the three national laboratories of the AEC—Argonne at Chicago, Brookhaven at Upton, L. I., and Oak Ridge in Tennessee—with 58 associated educational institutions participating. At the Oak Ridge Institute of Nuclear Studies, in which 19 Southern universities cooperate, recent announcement of a course in radioisotope application attracted three times as many qualified students as could be accepted.

The textile industry and all the other components of the country's industrial and social life have a stake in the accelerated training of isotope technicians since the basic principles and discoveries in this field broadly envelope the whole heart of nuclear science. Not only can an individual profit by



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Pneumafil eliminates many of the problems heretofore accepted as inherent to spinning these materials.

Operating as a vacuum system, Pneumafil collects free lint and foreign matter from the yarn as it leaves the front rolls. When breakage occurs, the broken end is picked up and pneumatically conveyed to the collector. Here the waste is retained, open and loose, ready for reuse without waste machine processing.

Spinners are relieved of ends down troubles. There are fewer ends down and less time required to put an end up. Scavenger rolls are eliminated. Spinning room waste and cleaning are reduced. Housekeeping is benefited. Frame stoppages are reduced. "Wild" or "flying" ends and resultant doublings are eliminated. Waste is salvaged without reduction in original quality. Frequently, it is practicable to operate at higher spinning speeds with Pneumafil.

Whether purchasing new spinning or improving old, investigate the increased production, improved yarn quality and lower cost possibilities offered by Pneumafil.

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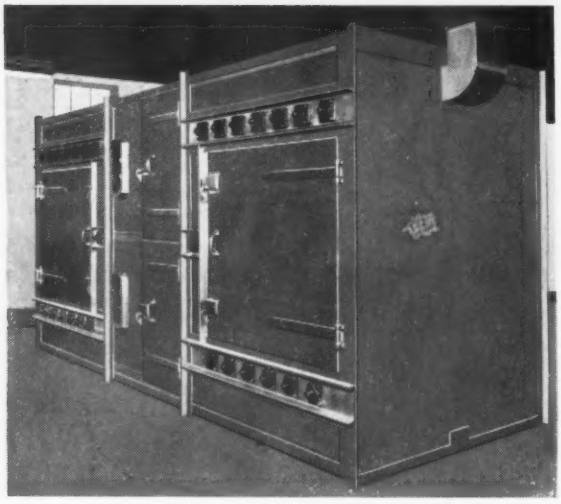

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Property for sale consists of 12 looms, plus Winding, Beaming and Finishing equipment in First Class working condition.

There is a 3 year lease on the building, with option to purchase. It includes: 10,000 square feet of working surface under a 14 foot ceiling, office space and living quarters for plant Superintendent and family. Ample floor space for additional equipment and land for additional construction.

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this work, but the peacetime applications of atomic fission will be clarified; and a larger segment of the population will be given a glimpse into the possibilities of the atomic age and a chance to speed its progress.

Water Conditioning

(*Continued from page 123*)

tween 7.0 and 9.0. For manganese removal, the optimum pH range is usually 8.5 to 10.0. An alkali, such as lime or soda ash, must usually be added. If large amounts of CO_2 are present, it is more economical to remove the CO_2 before alkali addition by means of an open aerator. However, the disadvantage of open aeration is saturation of the water with oxygen, which increases corrosion. Addition of lime without aeration, directly ahead of pressure filters, is practiced successfully to eliminate this difficulty.

Contact filters are used ahead of final filters if the amounts of iron or manganese are so high that the final filters would require excessive backwashing; they are also employed where the iron and manganese are resistant to quick oxidation. Contact filters are similar in design to ordinary fine filters but use a very coarse medium such as gravel, coke, limestone, or pyrolusite to provide large voids or storage space for accumulations of the iron and manganese hydroxides so that backwashing is not required so frequently. Such filters also furnish the necessary retention time and the catalytic effect of the coating of higher oxides on the granules, thus accelerating the oxidation reaction.

In many cases, iron and manganese are both present; and the ratio of iron to manganese is high so that it is necessary to remove the iron first. Manganese removal is dependent on the coatings of high manganic oxides on the final filter medium. Accordingly, a contact filter is used to remove the iron first; and then the purer manganese-oxide-compound coatings adhering to the filter medium granules in the final filter are able to remove the manganese without interference from excessive iron precipitates.

Some times, the water pH is not high enough for manganese removal. Consequently, it is necessary to add alkali between the contact filter and the final filter so that the iron is removed at a lower pH value in the contact filter and the manganese at a higher pH value in the final filter.

SETTLING BASINS. Settling basins are employed when the amounts of iron or manganese to be removed are so

"Sheer Beauty"

MISS TENNESSEE of 1948

(Dorothy Free of Chattanooga) is shown here during a visit to the Bryan Full Fashioned Mills at Chattanooga, where Reiner Twin Knitters are producing 15 denier 60 gauge stockings. "Sheer Beauty" was her verdict.

FEATURES OF THIS MACHINE:

- Fully assembled and ready to operate.
- Less Floor space requirements.
- High speed knitting and fashioning.
- Semi-Automatic welt turner.
- Fully automatic friction control.
- Individual motor drive.
- Up to 8 yarn carriers.
- To be operated by unskilled help.
- Simple design along the line of a standard full fashioned machine.
- To knit round heel stockings (or square heel stockings in connection with Reiner Auto Heeler).

Hosiery quality begins with the machine producing it. We, the makers of the REINER FOUR SECTION FULL-FASHIONED HOSIERY TWIN KNITTER are proud of Miss Free's competent opinion, as is the mill making the stockings.

If you are interested in this remarkable machine write for our illustrated catalog, or for an appointment to inspect it in actual mill operation.

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high so that even the contact filter would become overloaded. Also, they are used wherever a long retention period is required for the oxidation reaction, or if the iron and manganese are in organic combination so that coagulation is required. Alkali for pH adjustment plus coagulant acids such as alum, iron salts, activated silica, and clay are sometimes used to obtain best results. Fig. 4 shows a typical layout of a modern design of settling basin comprising the two steps of flocculation followed by settling or sedimentation. Total reaction time in this basin is usually 3 to 4 hr.

Since the oxidation of iron and manganese is aided by the catalytic effect of the higher oxides of iron and manganese, the use of a modern sludge-contact reactor, such as the design shown in Fig. 3, can be used to remove iron and manganese effectively and in the shortest possible time.

By introducing the incoming water containing iron and manganese with alkali for pH adjustment or coagulant aid, if necessary, into a bed of suspended iron- and manganese-oxide compounds, the iron and manganese in the water is made to react and to settle out quickly. This produces a clarified water substantially free from iron and manganese in the shortest possible time. The usual retention time in such a reactor is about 1 hr.

Where necessary, an open aerator can be installed above a reactor or settling basin to remove carbon dioxide and introduce oxygen for the oxidation reaction. The water can be coagulated and settled and then treated by filtration to remove last traces of suspended precipitates or solids.

Where the possibility exists for growth of iron bacteria, slimes, and other organic growths, chlorine can be introduced into the reactor or settling basin. Chlorination also aids in coagulating difficult waters containing iron and manganese in organic colloidal form.

USE OF ZEOLITES. If the hardness in a water is to be removed at the same time as iron and manganese and the latter are present in ferrous and manganese forms, it is common practice to use a sodium-zeolite softener. Pressure units are used, and so long as no air enters the system, the zeolite exchanges sodium cations for the iron and manganese and calcium and magnesium cations in the raw water, producing an effluent containing only sodium cations, i.e., a soft water free from iron and manganese.

Manganese zeolite consists of sodium zeolite that has been treated by manganous chloride or sulphate to

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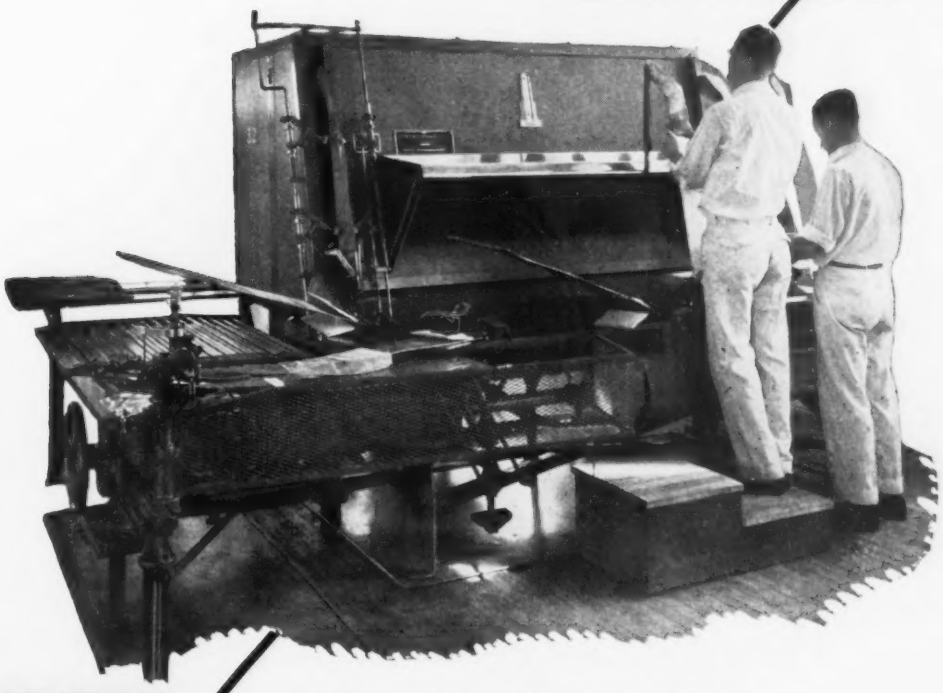


AND OUT IN THE MILL . . .

THEY AGREE ON

PROCTOR BOARDING MACHINES

In the panelled office—with the men who study the profit and loss statements and out in the mill—with the men or women who operate the machines—there is complete agreement that Proctor automatic boarding is *the* answer to the mill's boarding equipment needs.

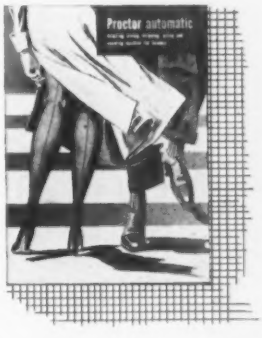
This modern boarding equipment offers comfort and simplified operation to the boarder; produces beautifully finished stockings or socks and enables the manufacturer or finisher to earn his profit.

The features that provide for the health and working comfort of the boarder are as carefully embodied in the machine as those mechanical features which assure the improved finish of the hosiery and the increased production.

Proctor boarding machines are being used with exceptional results for all types of women's, men's and children's hosiery in leading hosiery mills throughout the country. Wherever these machines are in operation—boarders and mill men are agreed that it is the *only* equipment that provides, at one time, maximum production for the mill—with a minimum of effort for the boarder.

Write for the new catalog

all about Proctor automatic boarding equipment for men's and women's hosiery. Just off the press—this catalog will answer many of your questions about Proctor machines.



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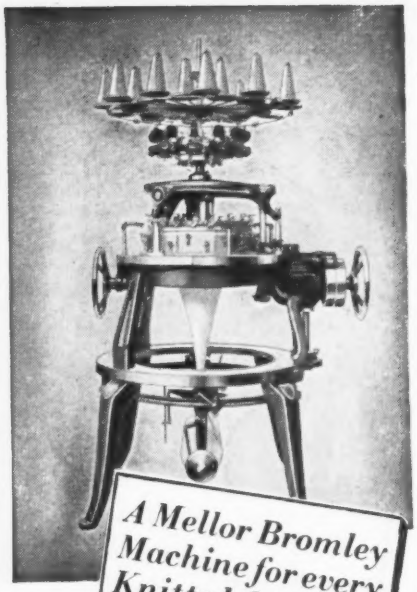


Write for descriptive leaflets of the Mellor Bromley Interlock and many other top line machines

MELLOR BROMLEY AND CO. LTD.
LEICESTER, ENGLAND

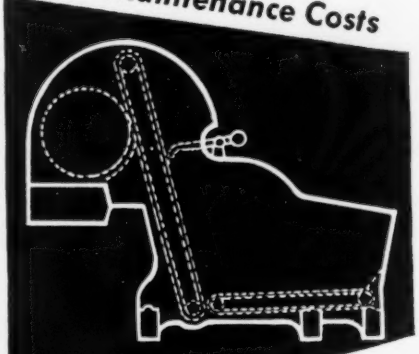
convert it to manganous zeolite by cation exchange and then oxidized by potassium permanganate. The higher oxides of manganese formed in this reaction are carried by the zeolite on the surface of the grains and make oxygen available for converting the iron and manganese, in the water percolating through, to the insoluble oxide forms which are then filtered out in the next lower layers of the bed.

Periodically after the manganese-zeolite bed has lost most of its available oxygen, it is backwashed and regenerated or re-oxidized with potassium permanganate or similar oxidizing reagent; and the cycle is repeated.

In order to reduce the regenerant-chemical operating cost of this method, it is common practice to remove as much iron and manganese as possible by aeration followed by filtration and then to finish removal by manganese zeolite.

A manganese-zeolite unit is similar in construction to a sodium-zeolite softener and is usually employed where very low concentrations of iron and manganese are desired in the effluent water.

For HIGH Production and LOW Maintenance Costs



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Correct Temples

(*Continued from page 126*)

ple segments are separated by washers. The rings and washers are set at a slant so that, in turning, each ring will stretch the cloth outward as the cloth is woven.

Selection of the proper temple is very important. It is a fallacy to expect one type of temple to give good results on all kinds of fabrics.

Single-ring-roll temples will give good results when weaving a fabric which has little filling contraction or warp tension.

Double-ring-roll temples with one cap will give good results on fabrics having a tightly woven construction.

Double temples are suitable for extra-hard-weaving fabrics where the pick is pounded in tightly and considerable warp tension is necessary. This temple gives very good results in weaving 18-oz. government serge.

Fallspun
QUALITY YARNS
FALLS YARN MILLS
Woonsocket, R. I.

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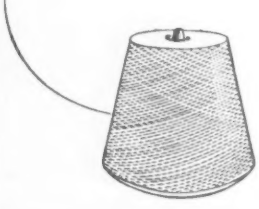
COAST-TO-COAST



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Send us a small supply of your yarn and we will wind and return with Testwind Report and Catalog.

F. A. LAZENBY & COMPANY
3106 Elm Avenue, Baltimore 11, Md.

Lubrication System

(*Continued from page 115*)

electric motors can suffer considerable damage from overlubrication. Overpacked ball and antifriction bearings often create excessive friction and heat, thereby overheating the oil. Lowered viscosity of the grease lowers its efficiency and also wastes lubricant through loss by overflow.

The rule followed at Richmond for

Memo on Modernization

ANOTHER GREAT TEXTILE PLANT SPECIFIES HUNTER EQUIPMENT

When one of the largest and most successful worsted mills in the country embarked on its program of installing new and high speed wet finishing, drying and carbonizing equipment, it also specified Hunter, because:

(a) The Hunter Continuous Washer, shown installed, enables this mill to scour cloth continuously at rates from 40 to 50 yards per minute at tremendous savings in labor, water, soap and power.

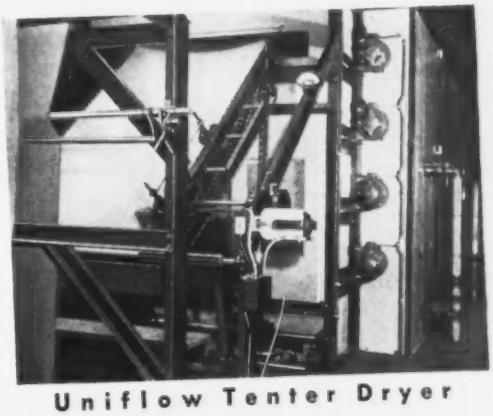
(b) The Hunter Uniflow Tenter Dryer, also shown installed, dries this plant's 12 ounce worsteds at rates up to 60 yards per minute, with one man's labor as a machine operator.

(c) The Hunter Continuous Range Piece Carbonizer affords this same plant uniform, trouble-free carbonizing at high speed rates, in a minimum of floor space and with a minimum of labor, steam and power.

If you are contemplating machine replacement or expansion in preparation, wet finishing, dyeing, drying or carbonizing equipment, we invite you to write for catalogs with more details, or we will be glad to have a competent engineer call. — Write.

Memo on Modernization

Continuous Carbonizing Range



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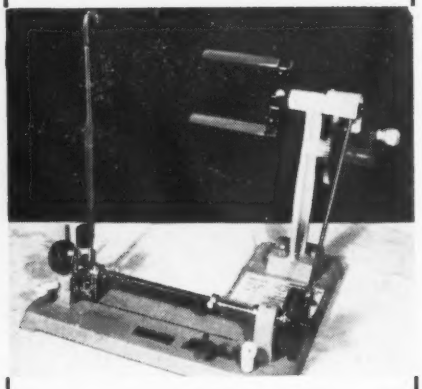

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It is considered a waste of time and money merely to drain and replace the oil in reservoirs and gear cases. An accumulation of sludge, metal particles, and dirt is not removed by draining; and damage to bearings and gears results from these impurities. Bearings, oil reservoirs, and gears are flushed once each year and refilled with fresh lubricants.

Improvements noted at Richmond since the supervised schedule of lubrication was adopted include elimination of flooding cups, overpacking of bearings, and excessive lubricating of parts; improved cleanliness; and less oil damage to yarn and fabrics.

Rayon-Fabric Defects

(*Continued from page 127*)

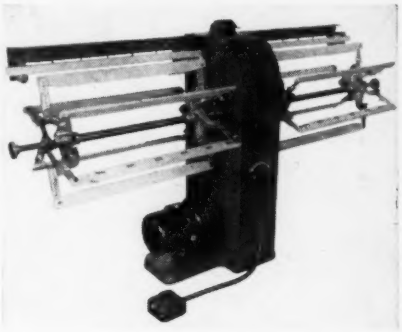
a cut along its surface was revealed. The broken ends reflected more light, causing them to appear lighter. The defective yarn was also longer in the cloth than the remainder of the warp ends. It was assumed that it had been woven into the fabric loose. During some part of the finishing operation, this longer end, because of its projection above the surface of the fabric, was broken on some of the finishing rolls.

Next, a negligée fabric was received which showed evidence of canage (teariness) and reediness. It was demonstrated that this fault was caused by excessive size. Apparently this fabric had been manufactured satisfactorily when good grade size was available. But when inferior sizes had to be used, the problem of canage and reediness occurred.

Analysis of the warp showed the size content to be over 6.0%; the normal fabric shows a size content of approximately 3.0%. The gray fabric and warp ends were quite stiff. The ends of the filaments remained stuck together on breaking. A carefully sized yarn shows a little opening out of the filaments at the break. By enlarged photographs of the fabric, the reediness was seen as uneven spacing; the canage spots appeared ridgy, the hills and valleys were seen as reflected light and dark portions on the photograph.

A section of the warp end was carefully removed from the fabric to include a canage spot and placed on edge on a microscope slide. This end was then photographed and enlarged, and it was possible to count the number of crimps of the affected part and the normal part over a comparative distance. The affected portion of the yarn was 4.0% longer than the normal

The double end Fidelity Skein Reeler is shown. Fidelity also makes single end Reelers. Complete information will gladly be furnished on request.



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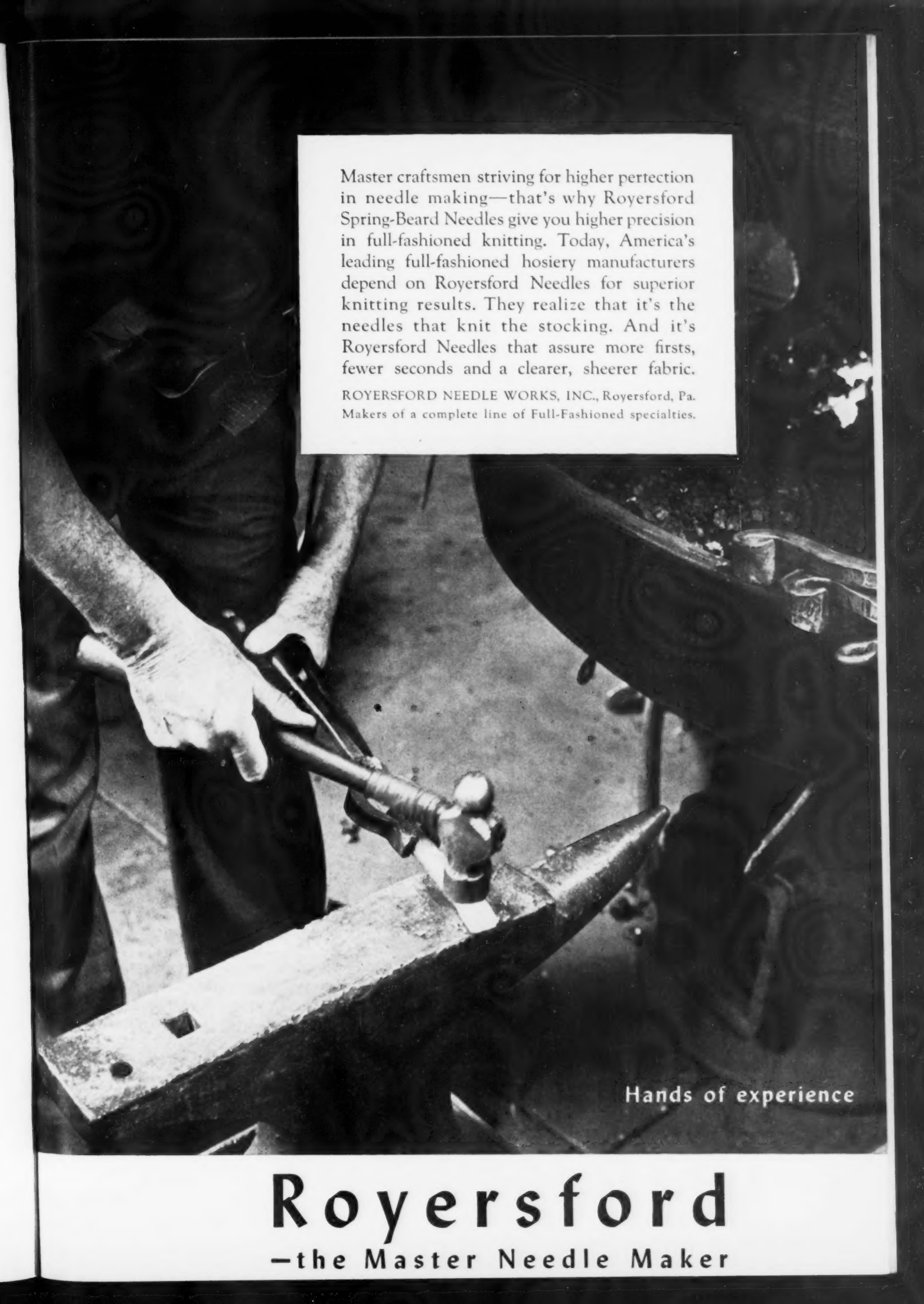
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fabrics for

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This season fashion leaders at home and abroad are placing emphasis on flannels, tweeds, cheviots and covert cloths... for softly tailored suits and dresses for both town and country. Significant in this trend will be fabrics containing a dominant proportion of Celanese* staple fiber. Wrinkle-resistant, possessing a high degree of dimensional stability, and suitable for a variety of textures and weaves... these fabrics will make news in the fashion field.
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The superintendent of this mill is an enthusiastic booster of ARMCO Stainless Steel for dyeing machines too. One tank has been in service more than 13 years; another group has been in constant use more than 12 years—and there are no signs of rust.

This report is typical of the experiences of many bleaching and dyeing plants with ARMCO Stainless.

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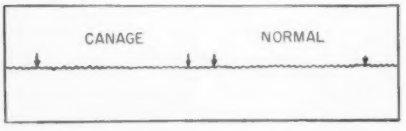
portion. The longer portion would be due to the greater amount of size covering this part of the end; and in weaving, the larger diameter of yarn would be required to take a longer course around the picks, thus creating the deeper hills and valleys.



CASE HISTORY 3: A very interesting request was received in which the defect was reported as low wet strength of creped filling in printed goods.

Initially, the fabric was tested for wet strength by the grab method of strength test, i.e. by cutting a piece of fabric 6x3 in. along either warp or filling and breaking the fabric on a strength tester.

The original sample submitted showed a low wet filling strength of 7½ lb. The next step was to check the construction of the fabric, count the ends and picks, determine denier of warp and filling, check twist, also determine type and origin of yarn. The test for type and origin of the yarn is made by microscopic examination of the cross-section.

The yarn was 100/40 dull warp and 100/40 bright filling. Sley was 126 and the number of picks 78. Take-up on the warp was 12.6% and on the filling 16.9%. Twist—warp. 3.0 tpi., filling 55 to 60 tpi.

Grab tests in pounds gave the following figures:

Warp		Filling	
Dry	Wet	Dry	Wet
29 lb.	9 lb.	25 lb.	7½ lb.

The single ends were also tested for strength and the results are shown in grams per denier.

Warp		Filling	
Dry	Wet	Dry	Wet
0.86	0.33	1.28	0.55

A comparison was made of the discharged and undischarged parts of the cloth and no appreciable difference was found.

No evidence of damage by embossing could be seen.

The dry calculated strength of the warp per inch of fabric, taken from the single end tests, was found to be 23 lb., not allowing for any additional strength due to support given by the filling. The actual warp strength was 29 lb. The dry calculated filling strength was 22 lb. which is only slightly below that of the actual strength of 25 lb.

It was decided to check on the same piece of cloth, the strength of the fabric from the gray state and through its various processes to the finished fabric.

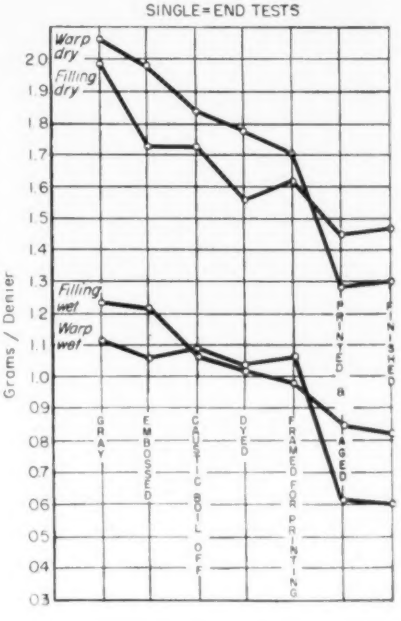
Samples were obtained from the fabric after it had gone through its various stages of manufacture:

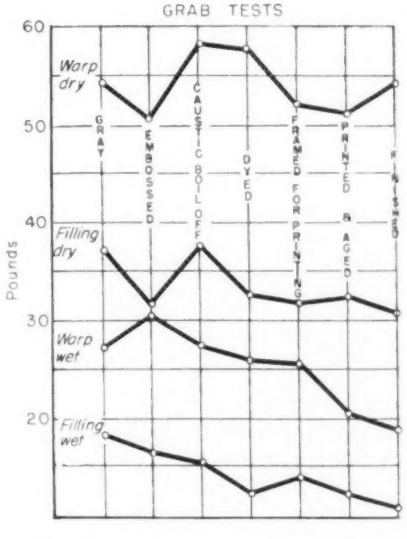
Gray,
Embossed,
Caustic boiled off,
Dyed,
Framed for printing,
Printed and aged,
Finished.

The accompanying graphs tell the story. The gray fabric showed the following original strengths:

	Warp	Filling
Grab (dry)	54½ lb.	37½ lb.
Grab (wet)	27½ lb.	18½ lb.
Single end (dry)	2.06 g. p. d.	1.99 g. p. d.
Single end (wet)	1.12 g. p. d.	1.23 g. p. d.

The difference in the wet single end test between the warp and filling, is due to additional twist in the filling yarn.





Following through the different processes, the embossed fabric shows a decrease in strength, but the wet

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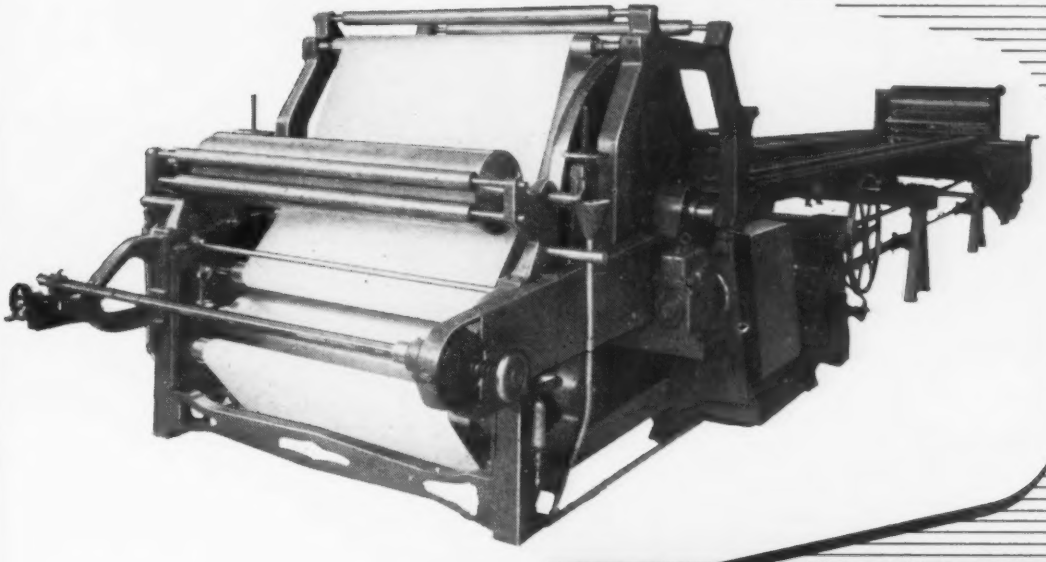

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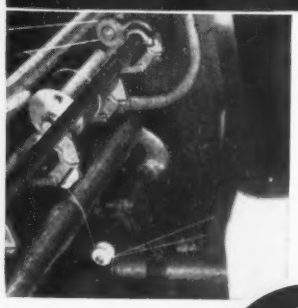

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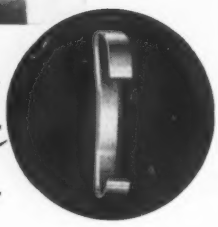

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strength has increased. The loss shown is due to some breaking of the yarns during this process. The single-end tests, of course, show loss due to bruising of the yarn. The next step was the caustic boil-off which showed a shrinkage of the goods. Here there is the increase in the grab dry strength due to the shrinkage of the fabric. There are some slight losses in some cases of the single end tests. The dyed fabric was then tested. The dry grab strength remained about the same, but the other grab tests showed losses in strength, with the greatest loss occurring in wet filling strength. The single-end test showed continued loss of strength. Following dyeing, we tested samples of the fabric after it was "framed for printing." Here is noticed a loss in strength in most of the tests. The next process was printing and ageing. The strength tests after this procedure show a decided drop in the case of the single ends. The final tests on the finished fabric showed a continued loss in wet strengths.

The over-all loss in strength from the gray to the finished was:

	Warp		Filling	
	Dry	Wet	Dry	Wet
Grab tests	nil	26.0%	16%	42%
Single-end tests	37%	46%	26%	33%

Loss in strength is greater for the wet tests than the dry tests. This is the usual trend where degradation occurs. Generally we can say that the loss in strength is greater for the single ends than for the grab tests, particularly so in the dry warp grab test where no over-all loss occurs.

The results show the most significant loss in strength occurs in printing and ageing.

It has been shown that there was progressive decline in the yarn and fabric strength throughout the different stages of finishing. The gray cloth had an original wet filling strength of 19 lb.; the finished goods at 11 lb. only just pass the minimum requirement of 10 lb.

There is very little latitude in the filling for extensive processing of this type of fabric to meet minimum standards. Only by great care in all the finishing processes can the minimum be exceeded. A plain-dyed fabric showed a filling strength of 14 lb. which easily passes the test. In the case of the weak goods, of course, not enough care had been taken in finishing.

It is suggested that in printed crepe goods of this type more picks should be woven in.

CASE HISTORY 4: Another case received was a complaint of excessive stretch in woven labels. The customer desired to have not more than 2½% shrinkage.

Two strips of labels, one woven from 75 den. and the other from 100 den. were received, which on boiling off showed a contraction of:

75 den.	10.5%
100 den.	9.8%

In order to determine where the shrinkage occurred, warp ends were removed from the original fabric and markings were made along them at known lengths, while held under minimum tension. The ends were boiled off and then allowed to dry free of tension. When dried, they were allowed to reach equilibrium under standard conditions. The ends were then remeasured at the tension used in the original measurement. The shrinkage was calculated from the difference in length of the original and relaxed yarn. The contraction on boiling off these warp ends was:

75 den.	5.1%
100 den.	5.5%

It was seen that half the total shrinkage of the label occurred in the warp and was obviously due to slasher stretch. The 5.1 to 5.5% contraction in boiling off represents a slasher stretch of 8.0%. The remaining shrinkage in the labels was due to the swelling action which is characteristic of viscose rayon, the swelling of the yarns causing a deeper crimp and thus affecting the length of the fabric.

It was suggested that slasher stretch be reduced to the absolute minimum of about 4.0%, the contraction of the warp on boiling off and drying would then be about 3.0%. However, this would only reduce the amount of contraction by 2½%.

It is not possible to reduce the total warp shrinkage of a viscose-rayon fabric of this type to as low a figure as 2½% without drying the material in a stretched condition. This, again, would attempt to recover its original length on wetting out.

A solution proposed for the problem was to weave the labels to a greater length with fewer picks per inch, so that they would finish to the desired length after full contraction had taken place.

CASE HISTORY 5: A dyed spun-rayon fabric had a defect which appeared as streaky warp and filling. There were also filling bars.

Initial examination of the fabric showed the filling shadiness to appear as a random slub pattern, varying in depths, also in bands. The warp streaks did not appear to follow any group of warp ends.

The first test in the analysis of this fabric was to take a cutting of the

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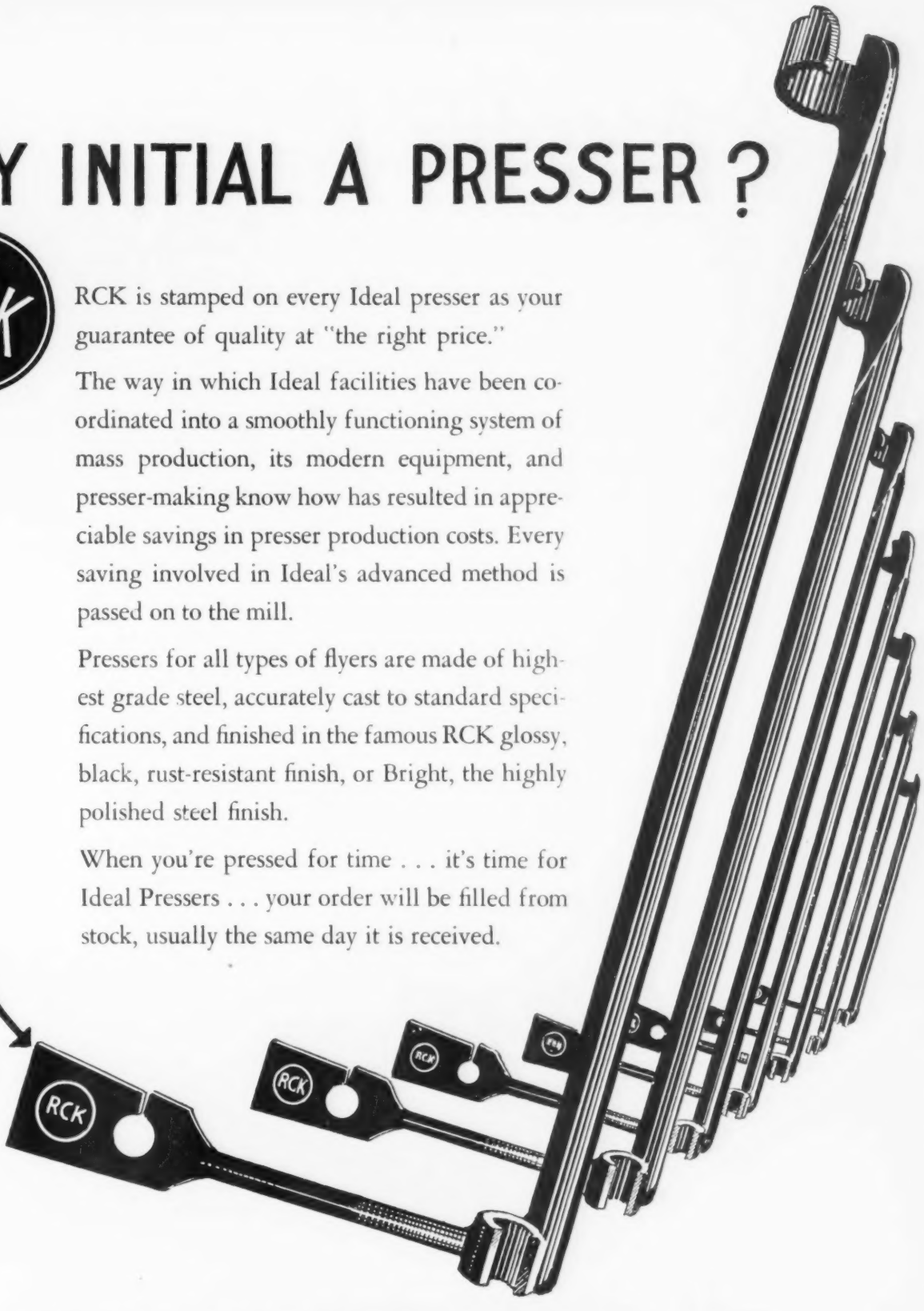

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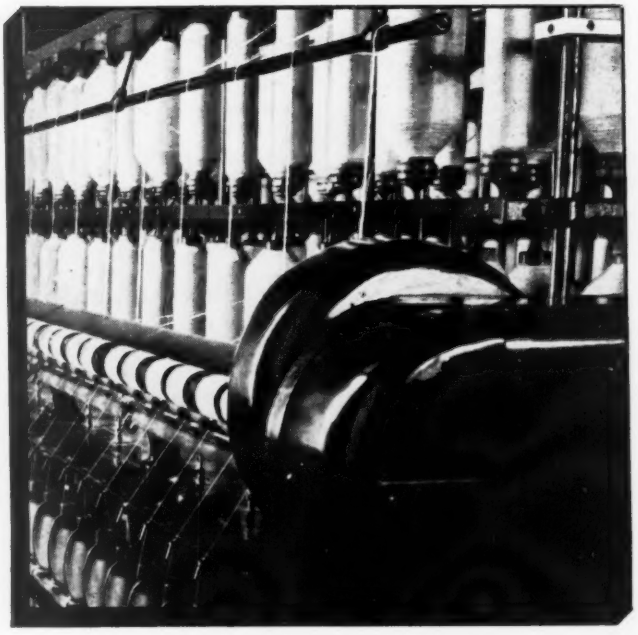

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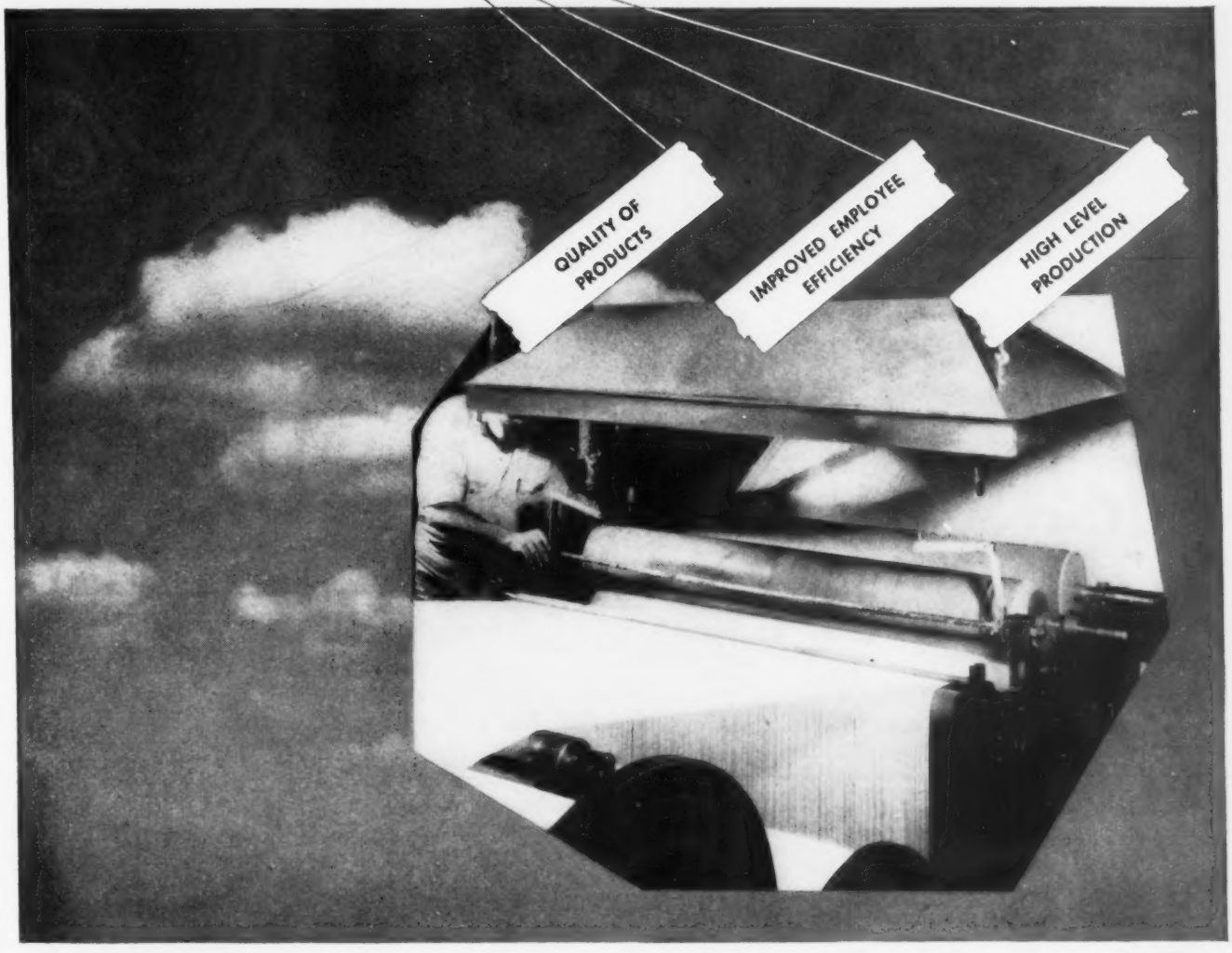

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fabric, remove the dyestuff, and examine the fabric in the white. In the white, the fabric appeared uneven in warp and filling. The fabric was then redyed, and the condition of streakiness was still present. Following the examination of this redyed fabric, yarn from the filling was wound onto a black card; and the uneven character of the spun yarn was noted.

Short lengths of the uneven yarn were then weighed to determine the count along the end. The length of yarn taken for this test was 9 cm. (3½ in.). From the length and weight of these short pieces, the cotton counts were determined. The count was found to vary from 14s to 27s and reached a maximum at approximately 165 in. intervals along the yarn. This distance equalled the traverse of one of the bobbins used in the drawing process of the yarn. The warp streaks in this sample were also caused by the uneven count of the yarn. This explains the fact that the streaks did not follow any group of warp ends.

The bars in the fabric were examined under various lights. By transmitted light, it was noticed that there was uneven spacing of the picks. Where one narrow light bar occurred at the start of a bobbin, there were 10% more picks to the inch. The apparent difference in shade appeared to extend further along the fabric, but this was found to be mainly an illusion caused by a starting mark.

Yarns taken from either side of the change, from the apparent light and dark bars, and wound onto a shade card were seen to show no difference in the color of the two yarns. The barriness was therefore judged to be due to weaving faults.

Mill Maintenance

Neglect Your Lights— And Lose 41c per $1.00

How much can improper maintenance reduce the amount of light received from a lighting system?

In what is called a typical installation by Sylvania Electric Products, Inc., 52% of the total light given off by the system was lost. Three factors were responsible:

1. Dead lamps ..... — 14(%)
2. Dark-colored, dirty walls ..... — 11
3. Dirty reflectors and lamps ..... — 27

Total loss 52%

For every dollar paid out for light, 41c is lost because somebody needs to replace dead lamps (perhaps 3 min. work per lamp) and to use a little soap and water on dirty lamps and reflectors (about 7 min. work per lamp). The only tools needed are a piece of waste and a ladder.

The frequency of cleaning depends, of course, on the location of the lights. Lamps in a cloth room may need cleaning only every 6 mo., while lamps in a card room or weave room may need it every few weeks. A light meter that measures the average light should be used in several parts of the room to establish a cleaning frequency. If the meter shows that footcandles have dropped 15%, it's time to do some cleaning.

Dry wiping is an inefficient method of cleaning lamps and reflectors. Westinghouse Electric & Mfg. Co., reports that a thorough washing will reclaim 10 to 15% more light from an installation than will dry wiping. Instead of soap, it might be well to use a cleaning fluid that rinses off easily. Use one tank of warm water for washing, another for rinsing; but do not wet the lamp base.

Mechanical defects that should be checked for include:

Bad sockets.
Bad suspension fittings.
Loose electrical connections.
Damaged reflectors.
Faulty switches and breakers.
Rusty conduit and fittings. (M-8)

Textile Equipment News

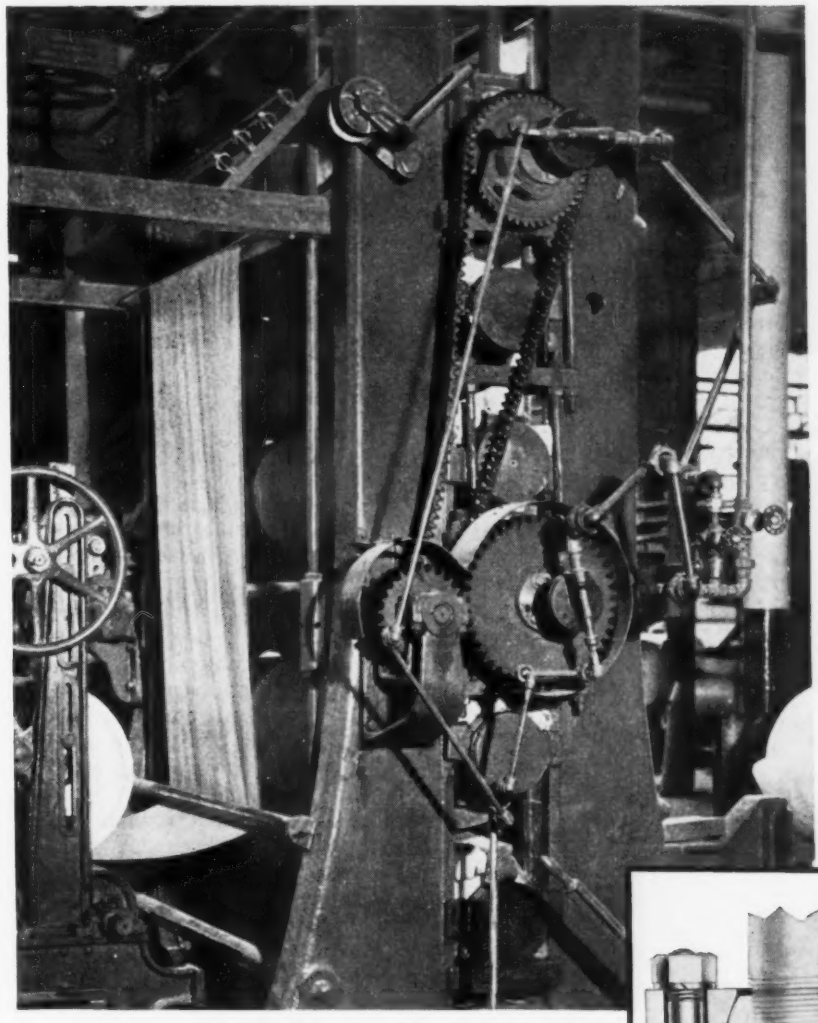
(*Continued from page 152*)

ing to the slivers entering the coiler head, or winding around the rolls to form a lap-up.

A ring on the bottom center of each clearer is used for pulling down to clean waste and foreign matter from the clearer cloth. While the clearer is held down by one hand, the other hand is used to remove the collection of waste from the wool felt surface. The clearer returns to the correct position against the rolls automatically after the tender releases the ring.

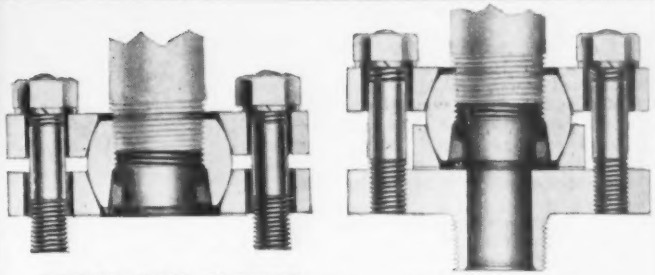
The pressure clearer is adaptable to either 4-roll or 5-roll drawing frames. On a 4-roll drawing frame, one clearer

Eliminate Pipe Strain in Calender Rolls with BARCO Swivel Joints



Here's one of the many ways Barco Joints reduce maintenance overhead in the textile industry. This calender in a Georgia bleachery is equipped with Barco Swivel Joints, which allow the calender rolls to be raised and lowered *without* introducing pipe strain. The textile industry also uses Barco Revolving Joints for heating in slashers, dry cans and sanforizers. The remarkably low cost and high efficiency of Barco service in this field is duplicated in every field of industry and transportation.

For particulars write Barco Manufacturing Company, 1834 Winnemac Avenue, Chicago 40, Illinois. In Canada: The Holden Company, Ltd., Montreal, Canada.

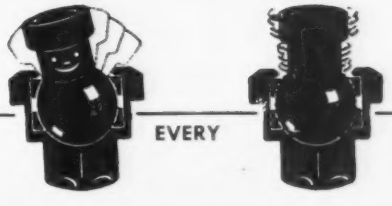


BARCO BALL FLANGE—Cross-section view of Barco Ball Flange for use on threaded and flanged rolls and for correcting roll misalignment. Sleeve can rotate concentric even though threads on roll are tapped off center.

BARCO FLEXIBLE JOINTS

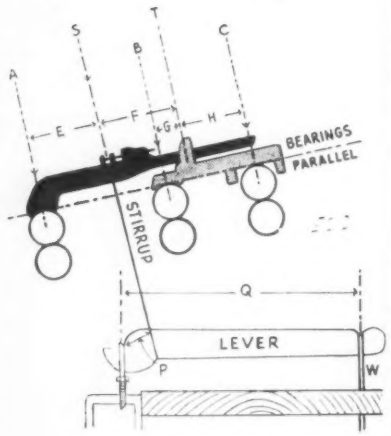
Not just a swivel joint ...but a combination of a swivel and ball joint with rotary motion and responsive movement through every angle.

FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY



"MOVE IN EVERY DIRECTION"

How to Check Weights on your Spinning Rolls



A, B and C } Pressures on Front, Middle and Back Rolls as shown above

E, F, G, and H } Distances shown measured in inches.

P — The perpendicular distance from stirrup to contact point at top of lever screw. When measuring, be sure rule is held so angle with stirrup is 90°

Q — The distance from contact point at top of lever screw to weight hook

T — The point of contact between saddles, as well as the pressure on the Back Saddle.

S — The point of contact between stirrup and Front Saddle, as well as the pressure on the Front Saddle.

W — The weight on the lever in pounds.

Formulae for Figuring Weight on Rolls:

For Pressure on Front Saddle: (W)(Q) = S(P)	Solve for S
For Pressure on Front Roll: (S)(F) = A(E+F)	Solve for A
For Pressure on Back Saddle: (S)(E) = T(E+F)	Solve for T
For Pressure on Middle Roll: (T)(H) = B(G+H)	Solve for B
For Pressure on Back Roll: (T)(G) = C(G+H)	Solve for C

DIXON suggests a careful **Check of Weighing on all Rolls**

The above weight ratio formulae are designed to help you to a more complete and visual understanding of the many factors affecting good weighting and the proper functions of an ideal saddle assembly. Knowledge of the hows of correct weighting and the application of this knowledge in practice may prevent many a drafting headache

Cut out this diagram and formulae and keep for your future reference or we will send you reprints on request If you encounter weighting problems which these formulae do not solve, send them to us for solution.

DIXON LUBRICATING SADDLE CO.
Established 1876
BRISTOL, RHODE ISLAND, U. S. A.

Sole Manufacturers of
DIXON
LUBRICATING SADDLES

serves the two front rolls, while the two back rolls are provided with another clearer. This results in two clearers for each delivery on 4-roll drawing frames. The 5-roll drawing frames can be equipped with spring-type clearers in accordance with specifications required by the individual mills, which can be one clearer for the two front rolls and another for the three back rolls or vice versa.

The clearer can be obtained for most slubbers, speeders, roving frames, and one-process roving frames.

Carrier Increases Braiding Machine Speed

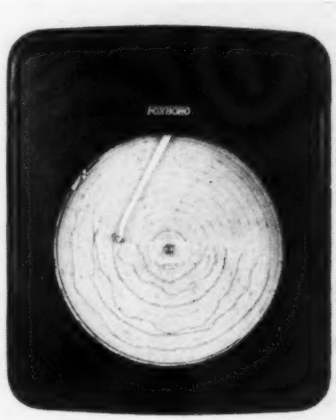
A new large-capacity braiding-machine carrier or spindle has been developed by B. & F. Carters & Co., Ltd., Albion Works, Bolton, England.

Carrying capacity has been increased from 1 13/16-in. diameter to 2 1/8-in., suitable for a small bench braiding machine of 4-in. diameter horngear. Cycles of the carrier around the machine have been stepped up from 60 per min. to 80 per min., thereby increasing capacity and speed in one set.

The Ace carrier is designed so that tension can be varied by means of a knurled nut situated in an accessible position at the base. By turning the nut, the tension can be increased or decreased four or five times as the requirements of the braid or yarn demand, thus saving a considerable time over the old method of changing the springs. The carrier has no exposed springs, leaving the carrier rack free from any working parts.

Up to 640 stitches per min. are possible on braiding machines equipped with this new carrier.

Instrument Records Six Variables on One Chart



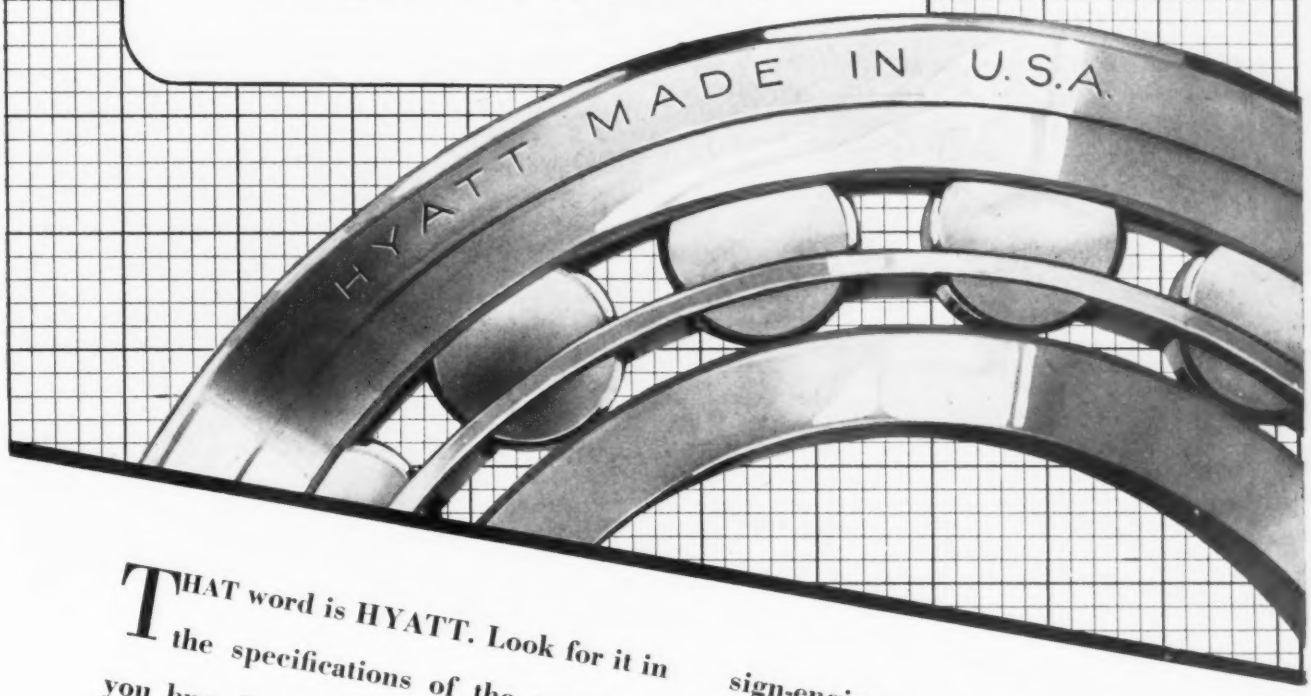
Six individual records are recorded in six different colors as often as every six seconds by this new instrument.

From one to six different records can be made on a single circular chart in six different colors at 6-sec. intervals on the new multi-record Dynalog recently introduced by Foxboro Co., Foxboro, Mass. The instrument has only one measuring circuit and one pen-arm assembly. The measuring circuit is corrected to each of six successive points of measurement through a unique switching assembly.

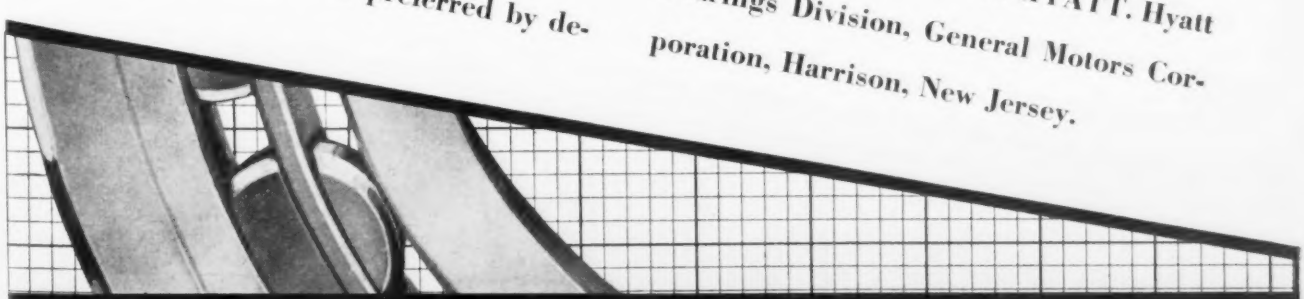
The rapid recording results in a record composed of minute dots so closely spaced that a continuous line is produced. The record of each measurement appears in a separate and distinctive color of ink which dries immediately upon contact with the paper, insuring freedom from smudging and blurring.

For printing each record, the single pen-arm picks up the appropriate pen (each of which is keyed positively to its corresponding measurement point) and seats it securely and precisely in the grip of a tiny, powerful Alnico magnet. The pen remains thus seated throughout its printing cycle, at the end of which it is replaced in the Rotacolor pen wheel. The Rotacolor unit, which carries and inks the pens (not shown in the cut—it's under the cover), rotates in synchronism with the pen-arm motion and the switching of measurement points. Synchronization of the moving parts is said to be foolproof and to insure that the record

A word for the buyer of looms and other machines



THAT word is HYATT. Look for it in the specifications of the machines you buy, for it's your guide to a better grade of roller bearings—bearings which in most cases will outlive the looms and other machines to which they are applied. Hyatt Roller Bearings, for more than thirty years, have been preferred by design-engineers in the textile machine field. Hyatts prolong the life of the machines—reduce maintenance cost—and stand up under the most rugged service. Manufacturer and operator alike know the true value of the word HYATT. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.



HYATT ROLLER BEARINGS

This Pin LASTS LONGER

...assures perfect service!

By keeping ahead with new developments, Crabb gives you stronger and better pins, to meet the most difficult requirements of modern textile processing!

These Pins—produced with new micromax heat-treating equipment—solve the problem of longevity plus uniformity. If you need pins made to meet special conditions, such as BREAKING but not BENDING, and vice versa, we can produce them for you by the new methods of hardening and tempering steel.

Our 78 years of service are at your disposal.

In addition to pins, our line includes *Lags, Cylinders, Combs and Hackles*—all of modern design and offer many advantages. Stocks on hand to give you quick delivery. Write us today.

William Crabb & Co.

301 Third Ave.
Newark, N. J.

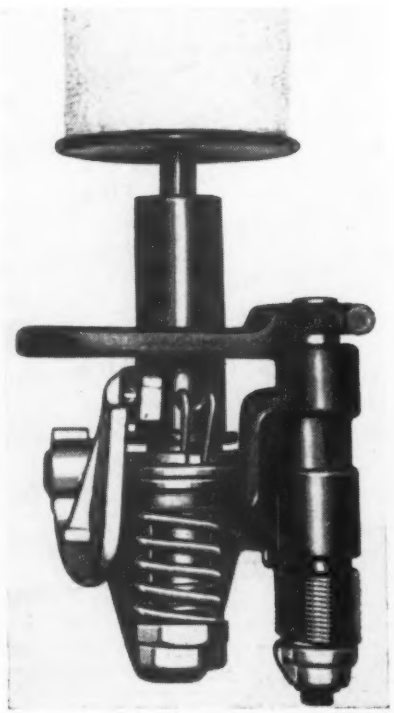
of each measurement is positively keyed to a characteristic color.

The instrument may be used for measurement of temperature, pressure, flow, humidity, liquid level, density, pH, speed, and other variables. The multi-record Dynalog should be especially applicable to single-instrument measurement and recording of atmospheric conditions at six points throughout a mill department, to the recording individual cylinder heat of multi-cylinder slashers, to finishing ranges, etc.

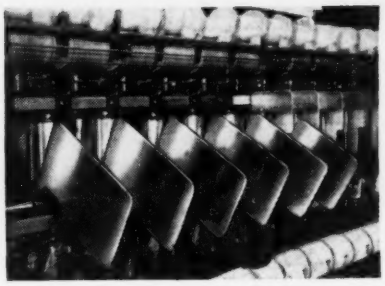
Twister Improvements Made By U. S. Textile Machine Co.

Several improvements in its U.S. Acme double-deck twister have been made by U.S. Textile Machine Co., Scranton 8, Pa. Newly improved features have been incorporated in the machine's spindle-swing, twist, and traverse units. Additional improvements include new balloon separators, diecast fingers, and Dowmetal traverse bars.

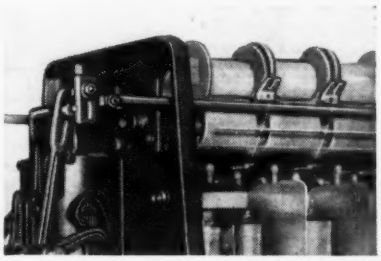
High-speed production, longer spindle life, cleaner yarn, and extra operator safety are said to be assured with the specially designed spindle pullout lever and automatically engaging brake. With this feature, the operator can safely disengage the spindle-swing unit without touching the yarn or moving spindle as the automatically engaging brake slowly exerts its braking action—a guarantee against too rapid a stop.



***An improved spindle-swing unit** with an 8-position spring adjustment permits tension to be regulated to a permanent position for any tension required to obtain constant spindle speed.*



***Balloon separators** are optional in either stationary or drop-down style. The drop-down separators can be moved, a section at a time, and easily cleaned without interfering with the running of the yarn.*



***Dowmetal traverse bars** are used in place of wood to insure an accurate and smooth traverse. Porcelain guides are attached to the bar with a stationary clip.*

Device Aids Roll Removal

***The Eas-Out,** a device which simplifies the removal of rolls of piece goods from stacks in bins has been developed by C. R. A. Corp., 45 W. 25th St., New York, N. Y. The Eas-Out is inserted into the end of the tube of the roll of goods for pulling it out. Regardless of whether the piece wanted is in the middle, bottom, or any part of the stack, it is said to slide out easily.*

The Eas-Out is made of lightweight metal for easy handling, with serrated chrome-steel grippers which give a firm grip on the inside of the tube and prevent slipping. Availability is immediate. Price is $15.00.

Advice

about your speed-control problem is yours for the asking!

When you Look to Lewellen you employ the pioneer in speed-control

Wire, phone or write
LEWELLEN MFG. CO.
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Variable-Speed

TRANSMISSIONS - MOTOR PULLEYS

Just Out!

Mount Hope PRECISION GUIDER

A NEW HIGH IN CLOTH GUIDING

This brand new Precision Cloth Guider makes it possible to automatically control the lateral movement of cloth, within closer limits, than ever before possible.

This precision control is made possible by an entirely new principle in cloth guiding, — a fluted selvage wheel which is contacted and turned by the selvage. The wheel actuates a rack which, in turn, actuates the tilting of nip rolls to guide the cloth toward or away from themselves as required. The result is practically instantaneous reaction and safest handling of goods, even the most delicate.

The Guider is purely mechanical; no coils to burn out or air valves to clog. It has wide adaptability, is rust proof, water proof, and has reversible Neoprene rolls.

Send for Bulletin No. SG-PG.

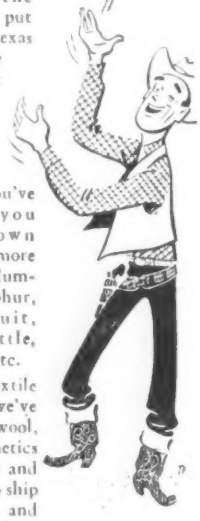
MOUNT HOPE MACHINERY CO.
42 Adams St., Taunton, Mass., U. S. A.

REPRESENTATIVES: Parkman Collins Company, Boston—for Maine; Ingalls Engineering Company, Providence — for N. H., Mass., R. I., and Conn.; John H. Andresen, Inc., Paterson — for Southern N. Y.; N. J., and Pa.; Slaughter Machinery Co., Charlotte — for the South; S. S. Wilson, 1737 Howard St., Chicago — for Mid-West; Sidney Springer, Los Angeles — for California; W. J. Westaway, Limited, Hamilton and Montreal—for Canada.

SMILIN' TEX SAYS:

"IT AIN'T BRAGGIN' IF YOU CAN PROVE IT"

In Texas we got more stuff of more different kinds to make more things than any other state.



And that's the truth. If they'd put a fence around Texas it would be more self-sufficient than any political subdivision on the face of the globe.

Here's why: you've got everything you need in your own back yard — more than plenty of lumber, iron, sulphur, salt, grapefruit, hydrocarbons, cattle, grains, poultry, etc.

But you're a textile man. All right, we've got cotton, wool, mohair and synthetics enough for Texas and surplus enough to ship all over the U. S. and all over the world.

We're centrally located in the U.S.A. and railways, highways, airways, intracoastal canals and deep water lead to every market in two hemispheres. We've got plenty of room, plenty of sunshine, plenty of pure water, plenty of friendly workers.

No State sales tax, no State income tax, but we do have a community property law. We've got plenty more resources, but space won't let us tell it.

Send for a Survey of the Texas Coast Country. On request, we will prepare for your company a carefully engineered and confidential survey of the Texas Coast Country individualized to fit your particular problem. No cost, no obligation. Address Research Department, Houston Pipe Line Company, Houston, Texas.

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Books of Interest

Fiber Behavior and Molecular Structure

PRINCIPLES OF HIGH - POLYMER THEORY AND PRACTISE, by A. X. Schmidt and C. A. Marlies; McGraw-Hill Book Co., 330 West 42nd St., New York 18, N. Y.; 744 pages, $7.50.

This volume covers the scientific aspects of materials composed of large molecules and, in particular, those constructed by a relatively large repetition of small, simple units. These structures may be linear, branched, or cross-linked. It is made clear that the peculiar physical and mechanical properties of high polymers are attributable directly and solely to the unusual shape and large size of their molecules. The authors, who are professors in the chemical engineering department of the College of the City of New York, have given a well-rounded treatment of the subject from the viewpoint of graduate as well as undergraduate instruction in a field which, they say, concerns about one-third of all American chemical engineers and chemists. This field includes fibers, plastics, rubbers, surface coatings, and adhesives.

The first 10 out of the 16 chapters cover general considerations, such as molecular forces, special behaviors, polymer formation, rheology, and the full range of properties. Then follow chapters on the specific materials in the high-polymer range. In considering fibers, the authors classify them as natural (occuring as a fiber in nature), artificial (made by chemically modifying a naturally occurring, high polymer), and synthetic (produced by polymerizing man-made monomers). The 44 pages on fibers present a survey of their physical properties, relating their performance to their external shape and molecular structure. As in other portions of the book, there are numerous charts, curves, and diagrams to clarify the properties under discussion.

The appendix presents a bibliography of high-polymer literature, together with tabulation of properties of fibers, rubbers, coatings, and adhesives. The volume is a useful reference work to those working in research or on the more scientific phases of product development.

Fiber Identification

IDENTIFICATION OF TEXTILE MATERIALS; The Textile Institute, 16 St. Mary's Parsonage, Manchester 3, England; 24 pages, 5 sh.

This working manual on fiber identification is No. 3 in the series of Handbooks of Textile Technology. It is No. 13 in the Textile Institute's series of standard test methods. In addition to data on fiber properties, fiber dimensions, laboratory procedure, etc., the manual contains a group of photomicrographs giving longitudinal and cross-sectional views. These views are taken uniformly at a magnification of 400 diameters. There are three fold-in charts which present in tabular form tests to classify unknown fibers with and without use of microscope, including reactions to chemicals and to burning. The material was collected and prepared by a committee of 12 under the chairmanship of J. M. Preston, B. Sc., F. R. I. C., F.T.I.

All About Commodities

COMMODITY YEARBOOK, 1948; Commodity Research Bureau, Inc., 82 Beaver St., New York 5, N. Y.; 512 pages, $10.00

After interruption during the war, publication of this complete compendium of commodity statistics has been resumed. It covers the basic textile materials such as cotton, rayon, wool, hemp, jute, and burlap; as well as metals, foodstuffs, oils, basic chemicals, etc. There are 74 different commodities covered, with data and charts on production, supplies, distribution, and prices. The 1948 edition also contains useful data of over-all application such as legislative enactments, use of price charts in forecasting, futures markets, commodities in the postwar world, price fluctuations in presidential-election years, etc. This volume is a handy reference work to those involved with the economic phases of textiles or with statistics influencing the markets for those things which textile mills buy.

New Edition of Dan River's Dictionary

DAN RIVER'S DICTIONARY OF TEXTILE TERMS; Dan River Mills, 40 Worth St., New York; 120 pages.

The fifth edition of this pocket-size textile dictionary has just been printed. First run in 1944, the number of copies printed now totals 850,000.

News of the month

Carpet Men Meet. At the 21st annual meeting of the Carpet Institute, Inc., held in New York Oct. 19, Joseph L. Eastwick, president of James Lees & Sons Co., was elected chairman of the institute's board, succeeding James D. Wise, president of Bigelow-Sanford Carpet Co., Inc. Among the speakers were Dr. Louis Nadler, economist, and Louis Goodenough, editor of *Retailing*. The institute has set Mar. 1 to 10, 1949 for a nationwide "1949 Carpet Fashion Opening." Mr. Goodenough urged strongly some system of "trade-ins" for allowance on old carpets when consumers buy new ones.

S and Z Adopted as ISO Standard. Fourteen American delegates attended the International Organization for Standardization Technical Committee 38 on Textiles at Buxton, England, last summer and have lately been reporting to their various societies. Among the subjects considered were: rayon definition, standard atmosphere and regains, textile test methods, tensile test methods, yarn count systems, etc. It was agreed that a universal yarn counting system should be adopted and that it should be direct, decimal, and metric. Adoption of the international agreement on S and Z twist (ISA bulletin No. 28) was endorsed by the committee to be submitted to the ISO council for publication as the ISO recommendation on S and Z twist. This was said to be one of the few points on which agreement was unanimous. This method of avoiding the old arguments over "right" and "left" twist was conceived by Edwin D. Fowle, publisher of TEXTILE WORLD, and was first offered to the industry in an article by Mr. Fowle, who was then technical editor, in the issue for August, 1934.

Find Substitute for Tar to Coat Bale Ties. At meeting called by the National Cotton Council and attended by bale tie makers, ginners, warehousemen, compress operators, and paint manufacturers, it was the consensus that no more ties should be painted with the substance which has been used for past crops. It was believed, however, that due to the possibility of long exposure in the weather, as well as in port warehouses, that some substitute coating should be developed which would prevent rust, but which, at the same time, would not stain the cotton. Representatives of one of the oil companies presented samples of a substance which, from the evidence presented and the statements made,

Textile Calendar

Textile Div., ASME, 27th annual meeting, Hotel Pennsylvania, New York, Dec. 3, 1948.

Third National Materials Handling Show, Convention Hall, Philadelphia, Jan. 10 to 14, 1949.

AATCC, New York Section, meetings at Kohler's Swiss Chalet, Rochelle Park, N. J.—April 1 and May 6, 1949; in New York—Jan. 14 and Feb. 25, 1949; Outing on June 17, 1949.

Wholesale Dry Goods Institute, annual meeting, Hotel New Yorker, New York, N. Y., Jan. 17 to 19, 1949.

International Heating & Ventilating Exposition, 9th annual show, International Amphitheater, Chicago, Ill., Jan. 24 to 28, 1949, in conjunction with 55th annual meeting of American Society of Heating & Ventilating Engineers.

American Society for Testing Materials, annual meeting, Atlantic City, N. J., June 27 to July 1, 1949. ASTM committee week and spring meeting, Chicago, Feb. 27 to Mar. 4, 1949.

National Cotton Council, 11th annual meeting, Los Angeles, Calif., Mar. 7 to 9, 1949.

Textile Wet Processing Equipment & Supplies Exposition, 71st Regiment Armory, New York, N. Y., Mar. 21 to 25, 1949.

American Cotton Manufacturers Association, annual meeting, Palm Beach, Fla., Mar. 31, Apr. 1 and 2, 1949.

American Gas Association, sales conference on industrial and commercial gas, Andrew Jackson Hotel, Nashville, Tenn., Apr. 5 to 7, 1949.

National Knitted Outerwear Association, annual meeting, Waldorf-Astoria Hotel, New York, Apr. 7, 1949.

Knitting Arts Exhibition, Atlantic City, N. J., April 25 to 29, 1949.

National Association of Hosiery Manufacturers; annual meeting, Hotel Claridge, Atlantic City, N. J., Apr. 25, 1949.

Annual Hosiery Industry Conference, Hotel Claridge, Atlantic City, N. J., Apr. 25 and 26, 1949.

Third Annual International Textile Industries' Exposition, Grand Central Palace, New York, N. Y., May 2 to 7, 1949.

National Packaging Exposition, 18th Annual Show, Auditorium, Atlantic City, N. J., May 10 to 13, 1949.

American Society for Testing Materials, first West Coast meeting, Fairmont Hotel, San Francisco, Calif., Oct. 10 to 14, 1949.

American Textile Machinery Exhibition (and Allied Industries) sponsored by National Association of Textile Machinery Manufacturers, Atlantic City Auditorium, Atlantic City, N. J., May 8 ot 12, 1950.

HOW TO CUT BUILDING MAINTENANCE COSTS—

For Floors . . .

Patch or resurface ruts and holes or badly worn floors with STONHARD RESURFACER. You can have smooth, wear-resistant, resilient floors over any week-end without any delay. No chipping, no chopping, no involved preparation—your own maintenance man can repair your floors quickly, simply, and expertly. Reduce accidents-speed traffic —lower maintenance costs . . . use STONHARD RESURFACER.

For Walls . . .

Stop leaks instantly, easily, and effectively with STONHARD STONTITE. Eliminate the danger and damage to materials and machinery from leaks or water-seepage. STONHARD STONTITE is used in all industry for Walls, Basements, Pits, Tunnels, Foundation, Outside and Underground Masonry.

For Roofs . . .

Anyone can stop leaks instantly on any type roof with STONHARD ROOF RESURFACERS. No heating, no complicated preparations, no special equipment . . . either a brush or a trowel is simply used to apply the Liquid or Plastic Roof Resurfacer over the old roof. They will not run, check, peel, or crack under hot summer sun or severe winter weather. Before you undertake ripping off or relaying an expensive new roof—investigate STONHARD ROOF RESURFACERS

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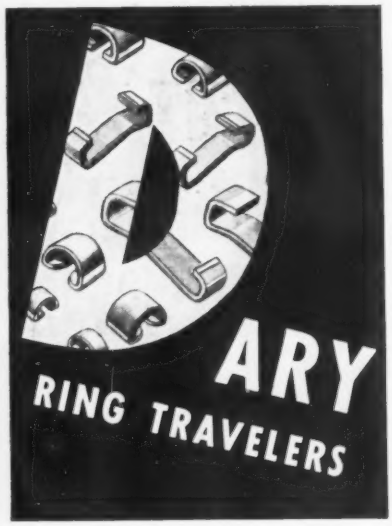
Address .....

City..... Zone.... State.....



THEY LEAD A "FAST" LIFE

A mile a minute! That's how fast a traveler goes as it speeds around your spinning ring. This fast life, with the wear and tear that goes with it, doesn't bother Dary Ring Traveler. The exclusive Dary Process gives them that hard, smooth durability that means longer traveler life.

This special Dary process also guarantees weight, temper, and stock of each traveler to give you better all-round service. Dary Travelers not only last longer, but also permit the use of higher spindle speeds.

Get further details from your nearest Dary representative. He'll give you plain facts about the outstanding features of Dary Ring Travelers.

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PROCESSED
SYMBOL OF SUPERIORITY

The DARY RING TRAVELER CO.

TAUNTON, MASSACHUSETTS

John E. Humphries, Box 843, Greenville, S. C.
John H. O'Neill, Box 720, Atlanta, Ga.
James H. Carver, R.F.D. 2, Shelby, N. C.

may possibly be the answer to this question. It is a transparent substance which can be applied in the same manner now being used by the steel companies for applying the asphalt paint, and it has a very quick drying time. According to one of the steel companies, laboratory tests have indicated that it will not adhere to the cotton. Further tests will be made.

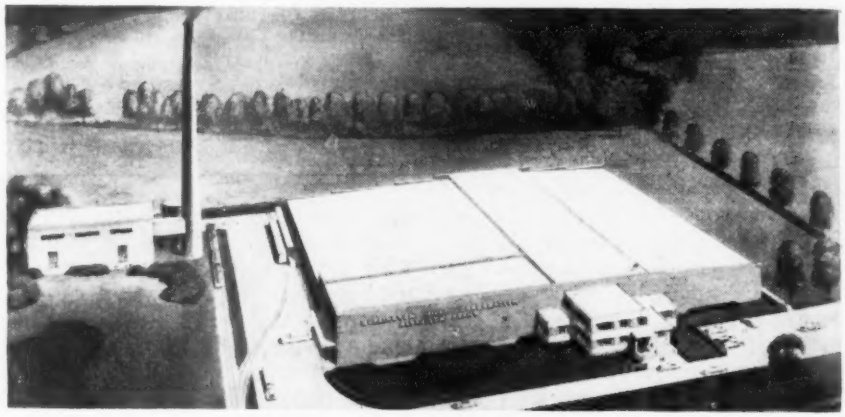
Cotton Mechanization Conference. Demonstration of mechanized cotton production and ginning featured the second annual Beltwide Cotton Mechanization Conference, at Lubbock, Tex., sponsored by the National Cotton Council, Oct. 14 to 16. The 500 delegates heard representatives of government, the extension services, the cotton industry, and Cotton-Belt land-grant colleges, emphasize the growing need for increased mechanization of cotton production. Other leaders, such as Chester Davis, president of the Federal Reserve Bank of St. Louis, and Frank Ahlgren, editor of the Memphis Commercial Appeal saw new economic opportunities for the Cotton Belt with the advent of machines to the cotton fields, and urged the representatives to rise to the challenges before them.

New Design Laboratory. The Edward C. Blum Design Laboratory was opened Oct. 14 in the Brooklyn Museum, Brooklyn, N. Y., to provide American textile designers with a professional working laboratory for comparative analysis of basic forms, ancient and modern, pertinent to solution of current design problems. Mrs. Michelle Murphy is research consultant. There are eight work rooms and an extensive collection of fabrics and garments going back 50 to 150 years. Among those firms and designers whose work was represented in the exhibit were: Arthur Beir & Co., Galey & Lord, Greeff Fabrics Inc., Goodall Fabrics Inc., Dobeckmun Co.

Electrostatic Web Production. Celanese Corp. of America is assignee of U. S. patent 2,442,880 of June 8, 1948 granted to Aaron Schwartz covering web production by electrostatic means. The patent is summarized by *Textile Technology Digest* as follows: "Artificial staple fibers, taken from a hopper, are oriented and parallelized in a vertical plane on a moving electrostatically charged belt without combing, carding, or like processing. A second system of belts continuously removes the fibers and flattens them into a web suitable for formation of rovings."

Textron's Nashua Plans. Supplanting plans of closing down, Textron, Inc., Nashua, N. H., has signed a 10-year lease on the Jackson mill and bleachery. The lease covers approximately half of the former Nashua Mfg. Co. property. President Royal Little has announced that Textron thus became the first tenant of the new Nashua-New Hampshire Foundation, a nonprofit organization formed by Nashua citizens to acquire Textron's real estate and mills in Nashua. The new arrangement is substituted for a previous plan to continue the sheeting mill experimentally through 1949. Manufacture of Purrey blankets is also planned.

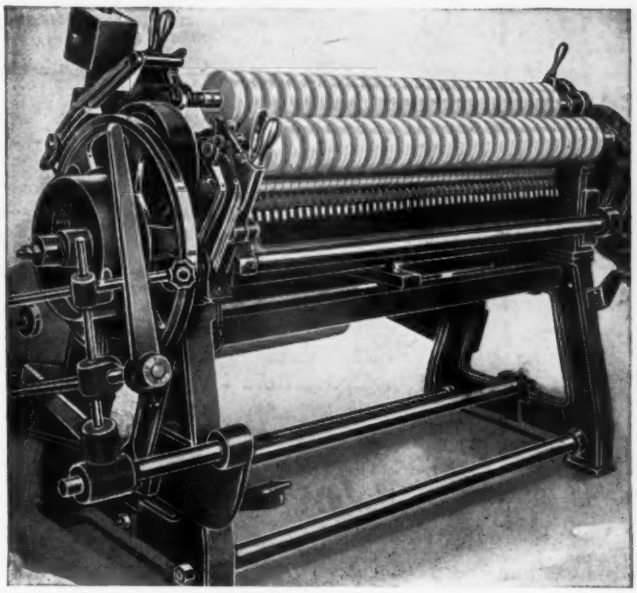
"Times" Forecasts Crisp Fabrics. Crisp femininity set the mood for spring in an array of 140 gala costumes brilliantly cast in "Fashions of The



ALTAVISTA FINISHING PLANT, of Burlington Mills Corp., Altavista, Va., has started construction of plant which will look like the above picture when completed. It will be modern in every respect, totally inclosed, air-conditioned, red-brick exterior with limestone trim, glazed-tile interior. A separate pump house, filter plant, and reservoir will be constructed. The plant will be equipped with the most modern of finishing equipment and will be ready for operation during the first part of 1949. Daniel Construction Co., Inc., Greenville, S. C., is the general contractor.

Camachine 26-3A

converts *tacky* fabrics into *narrow* rolls with *clean* edges



Camachine 26-3A is the ideal machine for fast, dependable production of clean-cut *narrow* rolls of all types of impregnated, coated or tacky fabrics and paper. Score-cut slitting tends to seal the cut edges, greatly reducing fraying and linting. The use of two rewind shafts assures *positive separation* of the finished rolls. This machine converts web as wide as 56″ into strip as narrow as ½″ (or ¼″ with special slitters), and produces top quality rewound rolls up to 17¾″ diameter. For complete information on Model 26-3A, and other Camachines for the textile industries, write to:

Cameron Machine Co., 61 Poplar St., Brooklyn 2, N. Y.

Camachines

FOR FAST, TOP QUALITY ROLL PRODUCTION

...the world over

at NO EXTRA COST

The new quick-opening set-lock assembly on the Kno-Draft Air Diffusers

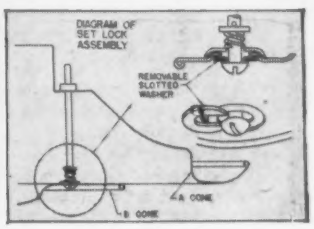
Cuts installation and maintenance time

Instant Cleaning and Inspection: With the new Type HD set-lock assembly, the inner element of the Kno-Draft Adjustable Air Diffusers can be quickly removed and reinstalled while the diffuser is in place without affecting its adjustment.

1. Remove cover cone (if used).

2. Press cone—slip out washers.

3. Remove inner element.



Now standard equipment.

It takes but a minute—requires no tools

The "B" cone or inner element of the diffuser is secured to the combined suspension and adjustment screws by a springloaded catch which is kept in compression by a slotted washer. The holes in "B" cone pass over the bolt heads. Just press up on cone "B" and insert or remove the slotted washers.

Visit booths 427-429 at the 9th International Heating, Ventilating & Air Conditioning Exposition, International Amphitheater, Chicago, Jan. 24 to 28.

FREE HELPFUL LITERATURE

☐ **Bulletin K-21:** Details on Type HD Set-Lock Assembly.

☐ **New handbook on air diffusion:** Shows how to create "custom-made" air patterns and eliminate drafts.

W. B. CONNOR ENGINEERING CORP.

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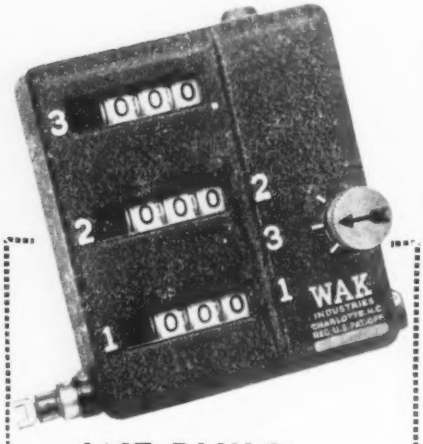
- ACCURATE
- DEPENDABLE



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RESET AND NON-RESET

★ Single Pick Counters
★ Double Pick Counters
★ Triple Pick Counters
★ Rachet Counters
★ Rotary Counters
★ Slasher Counters
★ Tenter Counters
★ Twister Counters
★ Inspection Table Counters
★ Sewing Machine Counters
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★ Special Counters

"Over 500 mills in the United States, Canada and foreign countries use WAK counters."

*T. M. REG. U. S. PAT. OFFICE

WAK
INDUSTRIES
CHARLOTTE, N. C.

Times—Seventh Edition." This extravaganza, which uses musical comedy techniques on a style show, stressed lustrous brocades, surahs, failles, taffetas, and slipper satins, together with airy organdys, nets, cottons, and voiles. Stiffened fabrics were prophetic of crisp outlines prevailing throughout, from crisp morning and beach cottons to moonlight brocades and satins. Color combinations were striking, and for formal wear the black-and-white scene, closing the whole show, was notable for its brilliance and luxury. This style show was given seven performances at the N. Y. Times Theater to a sold-out house. It was directed by Miss Virginia Pope.

Alabama Public Relations. Members of the Alabama Cotton Manufacturers Association held a combined public and industrial relations meeting in Birmingham Oct. 6 to coincide with the Alabama State Fair. This was the first such public relations institute held, and it showed the intense interest of the textile industry in public and employee relations. Speakers included R. K. Argo, personnel director for Alabama Mills, Inc.; Guy B. Arthur, Jr., of Toccoa, Ga.; J. Craig Smith, executive vice president of Avondale Mills; Dr. P. A. Austin, director of the medical department of the West Point Mfg. Co.

STA Meeting at Clemson. The South Carolina Divisional meeting of STA was held at Clemson College Nov. 6. L. M. Howell of Howell-Wilson Associates, gave a paper on "Causes and Cures of Bobbin Rejects at the Spooler." W. W. Mussman, of Riegel Textile Corp., spoke on "Supervisory Training." Dave Roberts is secretary of the division.

Canadian Society Meets. The Textile Society of Canada, Western Division, met at Cosmos Imperial Mills, Hamilton, on Oct. 29. R. Massey, superintendent of Canadian Cottons, Ltd., Hamilton, spoke on "New Developments in Cotton Spinning Practice," including comments on cotton and wool mixtures as spun on prevailing cotton-spinning machinery.

ACMA Summarizes Statistics. Believing that a brief and timely statistical picture of some of the forces affecting the textile industry is of interest to members, the ACMA is issuing between the 26th and 28th of each month a statistical summary entitled "Milestones—U. S. Textiles." Prepared by Miss Julia Long, of the Association staff, this series will be based on figures compiled from Federal sources.

Don't Overlook the
MATERIALS-HANDLING SHOW

MATERIALS-HANDLING EQUIPMENT offers a textile mill one of its greatest potential cost savers. Since 1939, the textile industry has experienced the greatest rate of rise in labor costs of all industry. Today, according to a recent statement by a mill man, mills can afford to spend up to $20,000 to eliminate a single laborer.

One of the best ways to see what equipment is best suited to your mill and how, is to visit the annual Materials-Handling Show. Next month about 300 exhibitors will display equipment of all types—some of which may be useful in your mill.

The Third National Materials-Handling Exposition will be held in Convention Hall, Philadelphia, Pa., Jan. 10 to 14, 1949. TEXTILE WORLD will be there—Booth 607. Tickets for show may be obtained by writing TEXTILE WORLD, 330 W. 42nd St., New York 18, N. Y., or at the door of the show. Hotel reservations may be obtained by writing Housing Bureau. Third National Materials-Handling Exposition, 17th and Sansom Sts., Philadelphia 3, Pa.

Army Awards. Awards have been made by the New York Quartermaster Purchasing Office, New York, N. Y. on QM-30-280-49-288 covering 36-in. cotton uniform twill, 8.2 oz., Type 1, Khaki 1, to: Reeves Bros., Inc., 2,600,000 sq. yds. at 97.35¢; J. P. Stevens & Co., Inc., 1,500,000 sq. yd. at 98.45¢ and 1,000,000 sq. yd. at 97.45¢. The 4-oz., 35-in., khaki poplin was awarded at 61.94 to 66.35¢ for about 5,500,000 yds.

Aluminum Approved for Ducts. The National Board of Fire Underwriters has approved aluminum for use in the installation of ducts for air-conditioning, warm-air-heating air-cooling, and ventilating systems.

Promote Knit Gloves. The Association of Knitted Glove & Mitten Manufacturers' scheduled Nov. 15 to 20 as National "American Knit" Glove Week. Birch White is the new color in men's gloves and mufflers.

PTI Alumni Dine. The annual fall dinner of the Philadelphia Textile Institute Alumni Club of New York was held Nov. 4. Charles W. Carvin, of Charles W. Carvin Co., was speaker of the evening. William L. O'Donovan, sales manager, Filament Yarn Div., Celanese Corp. of America, was master of ceremonies.

THE WETTER YOUR PLANT EQUIPMENT AND WALLS THE MORE YOU NEED

DAMP-TEX ENAMEL

Proved Fungus Resistant by FUNGUS TEST

PRESERVES AND BEAUTIFIES DINGY WET WALLS AND EQUIPMENT

Dark, dingy walls cut down efficiency Rusty, neglected equipment increases depreciation costs. Rot, bacteria and fungus play havoc generally. The Damp-Tex system was created for the plant where the presence of moisture, heat and other unusual conditions hinders proper surface maintenance. Over 4,000 plants have discovered its superiorities. Write for our trial offer.

Proved Lactic Acid Resistant by ACID TEST

STEELCOTE MFG. CO. • ST. LOUIS, MO.

Canadian Manufacturer—Standard Paint & Varnish Co., Windsor, Canada

Maguire Service to MANUFACTURERS DISTRIBUTORS SELLING AGENTS

Eliminates *credit* losses; makes *CASH* available as shipments are made; makes possible increased sales volume, without increased fixed invested capital.

Faster and greater turnover should yield increased profits without credit risks.

Write today for details.

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Check Credits
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MEANS

DESIZE with EXSIZE!

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PABST BREWERIES

Copr. 1948 Pabst Brewing Company Milwaukee, Wisconsin

PABST SALES COMPANY

CHICAGO, ILLINOIS

Warehouses at Jersey City, and Textile Warehouse Company, Greenville, S. C.

NEWS ABOUT Suppliers

U. S. Bobbin & Shuttle Co., Lawrence, Mass., has appointed Harry W. Bagley, former woolen designer and mill superintendent, as a sales representative covering Pennsylvania, New York, and New Jersey. He has been a member of the National Association of Woolen & Worsted Overseers for the last 17 years.

Rodney Hunt Machine Co., Orange, Mass., has appointed Langdon M. Phillips, former engineer with Shell Oil Co., to the post of sales engineer. He will operate from the home office, covering Massachusetts, Rhode Island, and Eastern Connecticut.

Bullard Clark Co., Danielson, Conn., has assigned Thomas Soucy, Jr., New England service engineer of E. H. Jacobs Northern and Southern Div., Danielson, Conn., and Charlotte, N. C., to call upon weaving mills in the Middle West.

American Paper Tube Co., Woonsocket, R. I., is celebrating its 50th anniversary in business. It was founded in 1898 with two machines devoted to making cop tubes for woolen mule spinning and has expanded to produce carriers for virtually every branch of the industry. It has a branch plant at Greenville, S. C. Harold L. Amrhein is president and treasurer.

Todd-Smith Banding Co. Inc., Gastonia, N. C., has added James R. Rawlings to its sales staff. Mr. Rawlings resigned as cotton classer for Van A. Covington Cotton Co., to take this position.

WAK Industries, Charlotte, N. C.—W. A. Kennedy, president of this firm, was recently elected president of the newly formed Dilworth Rotary Club. He has been an active member of the Charlotte Rotary Club for the last 12 years.

Nopco Chemical Co., Harrison, N. J., has named John J. McCloskey, Jr., to represent its Industrial Div. in the Central Atlantic states, including Maryland, Virginia, and Eastern West Virginia. John J. Ryan has been added to the sales force covering the Eastern states.

AGNEW BAHNSON, JR., president of the Bahnson Co., of Winston-Salem, N. C., is welcoming a class to the Maintenance Engineers' Course which his company recently introduced to customers. The courses covered the maintenance and care of air-conditioning equipment and were attended by 110 textile plant maintenance engineers, including six chief engineers. Roy Reynolds, of Slater Mills; Ralph L. Cockman, of Cleveland Cloth Mills; and Norman C. Pfaff, of Duplan Corp., all had perfect quiz papers.

Barco Mfg. Co., Chicago, Ill., has appointed Goudy Johnson to handle sales in the Southeastern states with headquarters at Rome, Ga.

Tubular Textile Machinery Corp., New York, N. Y., has moved plant and offices to 33-61 54th St., Woodside, L. I., N. Y.

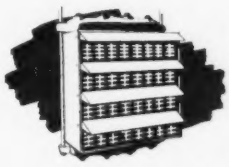
Stearns Magnetic Mfg. Co., Milwaukee, Wis., is now occupying its new building containing production, laboratory, and office facilities.

Management Evaluation Services, Inc., Toccoa, Ga., has elected Cyril D. Stapleton as vice president in charge of Southwestern operations.

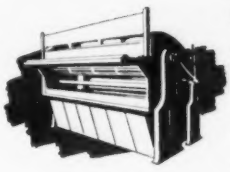
E. F. Houghton & Co., Ltd., of Canada, an affiliate of E. F. Houghton & Co., of Philadel-

Money-Saving Maintenance Cleaning for the Textile Industry

CLEANING BEFORE RE-COVERING STEEL ROLLS...
Soak rolls in fast-acting Oakite alkaline cleaner. Rinse thoroughly. Then dip rolls in mild acidic solution. Tumble in sawdust. That way you provide tenacious adhesion for wool covering. Glueing job is permanent. Cost for cleaning is low. Send for complete, free details.



CLEANING UNIT HEATERS IN PLACE... Simply apply solution of Oakite Composition No. 20 with the Oakite Steam Gun. Built-up accumulations of dirt, oil, lint, other clogging deposits are quickly removed. Heater efficiency restored. Method takes far less time than manual means. Free Oakite Service Report gives details.



CLEANING STEEL DYE BOXES... Swab or brush on a solution of Oakite Compound No. 84 to remove discolorations. Follow with thorough rinse. Mildly acidic Oakite cleaners are thorough and safe in cleaning action. Your nearby Oakite Technical Service Representative will gladly help you work out cleaning formula. No obligation for his services.

FREE: 66 WAYS TO CUT CLEANING COSTS!

Send today for the helpful digest "Oakite Cleaning for Textile Mills". It contains tested Oakite procedures for simplifying 66 textile mill cleaning jobs. You'll find it handy to have around when cleaning problems crop up. Your free copy will be mailed postpaid immediately upon request.

OAKITE PRODUCTS, INC., 42 Thames St., NEW YORK 6, N. Y.
Technical Service Representatives in Principal Cities of U. S. & Canada

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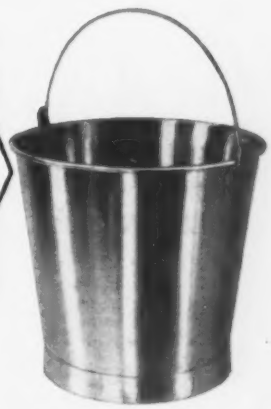
Specialized Industrial Cleaning
MATERIALS • METHODS • SERVICE

STAINLESS STEEL SMALL WARE FOR THE DYEHOUSE

Ruggedly Built for SEVERE SERVICE

Welded, reinforced construction gives Blickman small ware extra durability to withstand hard daily use in the busy dyehouse. For sizes and specifications send for our small ware circular.

STAINLESS STEEL PAILS
Built to take a beating. Welded construction for extra strength. Round corners for easy, thorough cleaning. Made of #18 gauge stainless steel for corrosion resistance. Ears are formed under rolled rim of the pail and transmit part of the load to the rim. Capacity to 20 quarts. Write for Bulletin 7028.



STAINLESS STEEL BUCKETS
Easy to clean. For extra strength quarter inch thick reinforcing bands are welded at top and bottom. Handles of ½ inch diameter mild steel rod are welded to upper reinforcing band. Round corner bottom speeds cleaning. Built of heavy gauge stainless steel. Capacity to 100 gallons. Send for Bulletin 7029.

STAINLESS STEEL DIPPERS
Made to withstand rough handling. Hemispherical bowl of #16 gauge 18-8 stainless steel with #16 gauge stainless tapered handle-socket welded on. Capacities 1 pint to 4 quarts. Handle of 4 quart size reinforced. Send for Bulletin 7030.

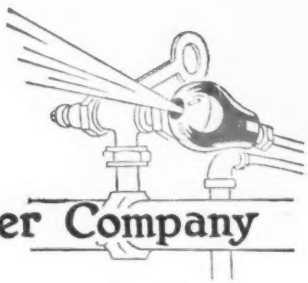
Write for further information

S. BLICKMAN, INC. 412 GREGORY AVE. WEEHAWKEN, N. J.
Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rolls, hoods, tanks.

A Most Profitable Investment

While complete Air Conditioning is ideal in textile operations, adequate and closely regulated direct humidification is yielding extremely high returns for the more modest investment involved.

Best form of direct humidification is the atomizer. For 40 years, representative textile managers have relied on Parks Turbo type atomizers and the conservative engineering practices of



Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

NEWS ABOUT *Suppliers* (Continued)

phia, gathered its officials and sales representatives in Toronto recently for the formal opening of the new Houghton plant at 100 Symes Road, Toronto.

Ideal Machine Shops, Inc., Bessemer City, N. C., has named Jack Lawrence, Jr., as engineer and sales representative. He will have his office at West Blocton, Ala., and will be available to mills principally in Georgia, Alabama, Tennessee, and Mississippi. Prior to his war service, he was with Medley Mfg. Co., Columbus, Ga.; after the war he was with D. & S. Engineering Co., Charlotte, N. C.

Officine Costruzioni Tessili E Impianti Riunite, Biella, Italy, woolen and worsted cards and related equipment, has appointed Ernest L. Frankl Associates, 22 E. 40 St., New York, as its sole representative in the United States. Frankl is also representative of S. A. Officina Meccanica Sant' Andrea Novara of Italy, French-type combs and gill boxes.

Hatch Textile Research, New York, N. Y., has added John West Sheppard to its staff as textile technologist and technical assistant to Herbert H. Hatch, director. Adolph Marklin, who has been with this laboratory nearly 19 years, remains as senior technician.

Willcox & Gibbs Sewing Machine Co., New York, has let contracts for the construction of a new factory in Nyack, N. Y., adjoining its present plant. The architects and engineer are Ganteaume & McMullen, Boston, Mass. New unit will provide employment for an additional 200 persons.

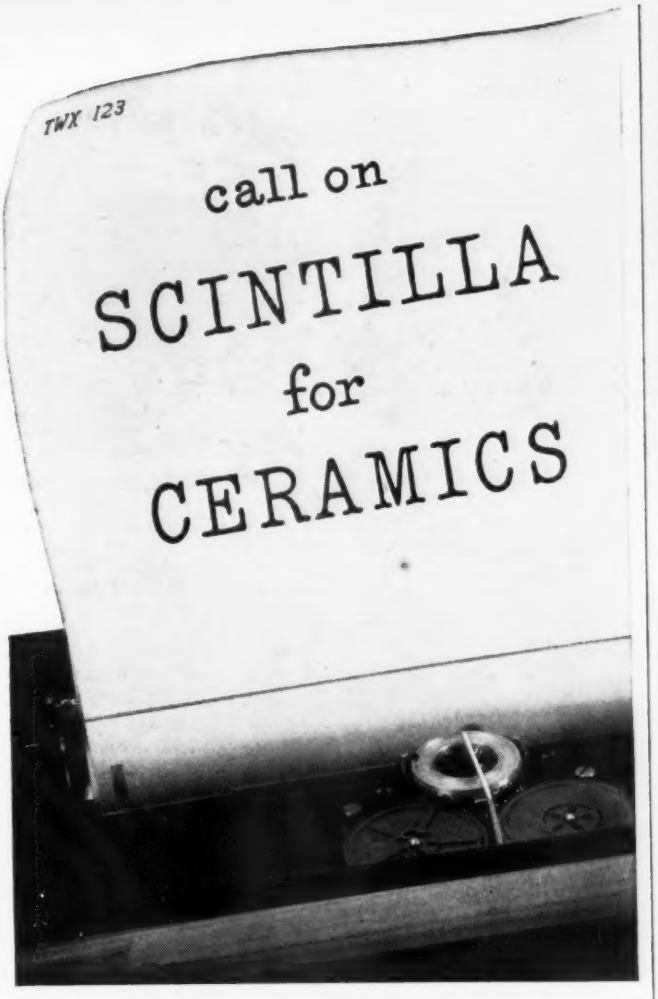
R. M. LOCKE has been appointed technical director of the dye department of Arnold, Hoffman & Co., Inc., Providence, R. I. He has been associated with General Aniline & Film Corp. and its various divisions for eleven years. During the last two years, Mr. Locke was vice president of the Ross-Smith Corp., in charge of their photographic printing on fabrics.

Mixing Equipment Co., Rochester, N. Y., has appointed O'Neill Pump & Engineering Co., Richmond, Va., as representative in that state.

Buensod-Stacey, Inc., New York and Charlotte, has appointed Martin E. Snyder as comptroller. Mr. Snyder formerly was secretary and treasurer of Carrier Corp., resigning in 1946. He is son-in-law of the late J. I. Lyle, former president and one of the founders of the Carrier Corp.

Chemical Processing Co., Charlotte, N. C., has added to its sales and service division Carnie L. Williams, Spartanburg, S. C., formerly with Draper Corp. R. L. (Bob)

DISTRICT ENGINEERS attending a sales engineering conference of Industrial Ovens, Inc., at Cleveland, Oct. 12 to 14, are shown inspecting one of the company's newly designed machines for coating paper, textiles, film, and foil. Pointing out features of the equipment is C. A. Litzler, president. Others in the picture are (left to right): A. H. Kruger, district engineer, Chicago; J. R. Hall, general manager, Cleveland; V. C. Leatherby, district engineer, Pittsburgh; J. K. Gillett, sales engineer, Cleveland; J. P. Clark, Jr., district engineer, Philadelphia; R. B. Symons, New England district engineer, Tiverton, R. I.; and E. V. Larson, district engineer, Toronto, Canada.



For the tough jobs that call for physical and dielectric strength, low surface wear and acid resistance, Bendix-Scintilla* ceramic bodies meet every requirement for real satisfaction.

Engineers who demand the best in quality can rely on this Bendix Division to meet agreed production schedules with ceramics that are up to the highest standards.

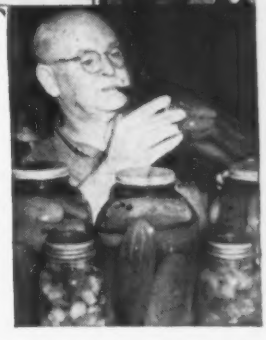
It will be well worthwhile to consult the Scintilla Magneto Division when a particularly difficult ceramic problem must be solved.

BENDIX SCINTILLA

*TRADEMARK

SCINTILLA MAGNETO DIVISION of SIDNEY, N. Y.

Bendix AVIATION CORPORATION



WHY I'M PROUD OF MY JOB IN MAINE

"I work as a machine tender in one of Maine's larger pulp molding mills. We make various types of molded pulp products such as plates, trays, egg flats, cake circles and so forth. I have worked in this same place for more than twenty-two years.

"Working here is a good deal like working for yourself. You take the same interest in your work and the same pride when you have produced a fine product. It makes you want to find better and quicker ways of doing things. Many times I've found short-cuts for producing better articles in the mill.

"Outside of hours, I keep busy and happy, too. I own a small place where I raise several hundred chickens and also have time for a good big garden. I grow my own pickles—the best in Kennebec County—and sell them around the neighborhood.

"My hobbies and a chance to get outdoors give me more interest in my work. You can have your big city jobs, but I'll take Maine for working and for living, too!"

Harry O. Pollard

Harry Pollard is a typical Maine worker. Maine men and women are more than capable of doing a good job . . . they *like* to do it! There are other real advantages when you locate your plant in Maine. These include fair taxes; easy access to the nation's largest markets; good production weather all year 'round; power at nominal cost; pure processing water—and living in America's Vacationland.

It would pay to investigate the industrial possibilities of the State of Maine, if you are thinking of moving, expanding or decentralizing. Send for the free booklet, "Industrial Maine".

STATE OF MAINE TEXTILE INDUSTRY

MAINE DEVELOPMENT COMMISSION, 793 STATE HOUSE, AUGUSTA, MAINE

Whitman Yarns

MONOMAC
French Spun
Yarns

Arlington
Bradford Spun
Yarns

SPUN FIBERS, INC.
Lenoir, N. C.
Worsted Yarn on the
American System

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CHICAGO 222 West Adams Street

NEWS ABOUT *Suppliers* (Continued)

Crowell, formerly with Burlington Mills Corp., is now associated with Chemical Processing Co. in its synthetic-yarn slashing and general technical-service division.

Southern Sizing Co., Atlanta, Ga., has appointed Bryant Chemical Corp., North Quincy, Mass., as agent for sales and servicing of Slix, liquid warp lubricant applied to warp yarn on the slasher as an application separate from the application of size.

Institute of Fashion Research, Inc., New York, N. Y., has opened offices at 61 E. 57th St. It is under the direction of Mrs. Bertha Körbholz and functions to give scientific market data to the fashion industry, including fabrics. It aims to discover consumer preferences in order that promotion and sales pressures may be exerted on those styles which hold greatest possibilities for success. The necessary polls will be conducted by Dr. George H. Gallup's Audience Research, Inc.

Market Forge Co., Everett, Mass., has appointed Robert P. Rudy as district manager of the New York area, with offices in the Grand Central Terminal Building, New York 17, N. Y.

Brown Instrument Co., Philadelphia, Pa., has placed John D. MacNamara in charge of textile industry sales operations in New England. He was assistant to Howard Marston, who has been transferred to the Minneapolis-St. Paul branch of the company.

United States Testing Co., Inc., Hoboken, N. J., has elected James A. Nary, formerly of Chicago, as vice president in charge of production, with headquarters in Hoboken. In addition to coordinating activities of the various company divisions, he will supervise company branch laboratories in New York, Boston, Chicago, Woonsocket, Philadelphia, and Los Angeles. He is a graduate of Lowell Textile Institute. Mrs. B. L. Wright has been assigned to Paris, France, to supply a Paris bulletin service available to industry for a monthly fee.

Diamond Alkali Co., Cleveland, Ohio, has created a new Technical Service Div., headed by Walter C. Bates, manager, and Dr. George F. Rugar, assistant manager. The new organization is designed to cover what the company describes as "all phases of service work connected with the sale and use of Diamond-made alkalies, coproducts, and derivative specialty chemicals." Diamond Alkali has appointed Otto L. Schweng to the newly created post of director of market research.

HARRY P. SMITH, formerly New York district sales manager of Mathieson Chemical Corp., has been made assistant general manager of sales. His headquarters will remain in the company's New York offices.

Amalgamated Chemical Corp., Philadelphia, expects to complete its new laboratory this month for industry service. Hillary Robinette, Jr., is research director. Charles E. Seel, a technical sales engineer with Dow Chemical Co. for the last five years, has been appointed Amalgamated's New England representative. He will also cover Philadelphia and eastern Pennsylvania.

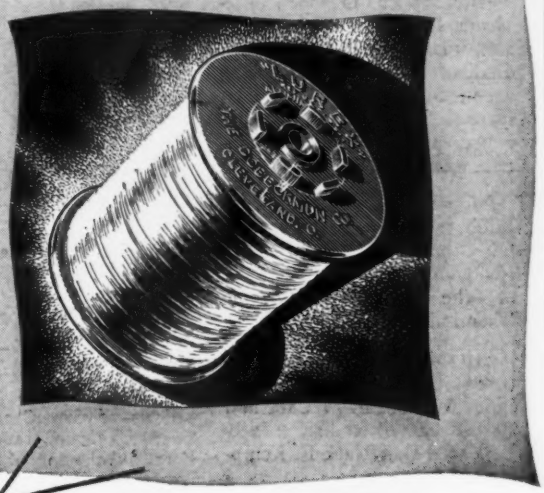
Southern States Equipment Co., Hampton, Ga., recently celebrated the opening of its new, modernized plant by holding an open house. More than 400 employees, their families, and invited guests toured through the plant and partook

---

At the recent Southern Textile Exposition, Greenville, S. C., the exhibitors contributed to a purse which was presented to Bertha M. Green, secretary of Textile Hall Corp., in recognition of her work in connection with putting on the show. Miss Green has written as follows to Earle Mauldin, Southern editor of TEXTILE WORLD, Atlanta, Ga.:

"Through the pages of TEXTILE WORLD, I wish to express my appreciation to the exhibitors for the generous remembrance given me at the Southern Textile Exposition recently. Yours sincerely, Bertha M. Green."

LUREX*



the NEW LUXURY METALLIC YARN

- **ABSOLUTELY NON-TARNISHABLE**—retains brilliance forever when instructions are properly followed.
- **ODORLESS**—no unpleasant metal or tarnish odors can occur.
- **EASY TO LAUNDER AND DRYCLEAN**—by the same methods used for rayon.
- **SOFT AND PLIABLE**—in finished fabric Lurex has good hand—is not harsh or abrasive.
- **LIGHT IN WEIGHT**—provides metal luxury look without customary weight.

These glamorous gold, silver and copper yarns can be used and sold with confidence. Lurex overcomes all of the limitations that formerly restricted the use of metal in *wide loom* fabrics.

Designers can now add to their color palettes the ageless rich tones of metal to create appealing and practical fabrics.

Lurex is available to qualified mills by itself and in a wide variety of core yarns and twists. It can be woven or knitted with all natural and synthetic fibres.

INSTRUCTION TAGS

Assure customers that your fabrics contain non-tarnishable and launderable Lurex. Ask for identification and instruction tags for use by end product manufacturers.

*Reg. U. S. Pat. Off.

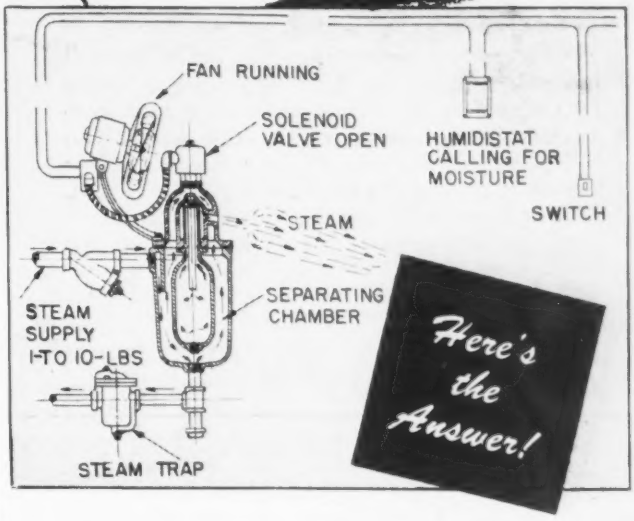
LUREX

The Metallic Yarn That *Never* Tarnishes

For further information write
The Dobeckmun Company, Yarn Division, Cleveland 1, Ohio.
New York Office and Show Room 250 West 57th Street.

HUMIDIFICATION REDUCES FIRES IN PICKER ROOMS!

"In mills having opener-picker room humidification, the AVERAGE FIRE FREQUENCY WAS ONLY 39% and AVERAGE FIRE DAMAGE ONLY 35% of the average at all mills." * —Textile World



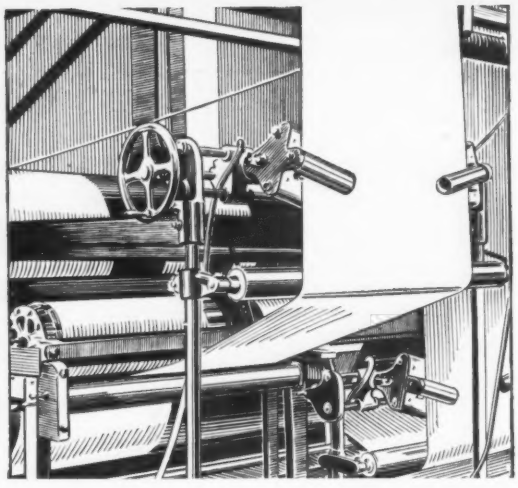
STUDIES by Factory Mutual Laboratories show that moisture content is the most important factor in the susceptibility of cotton to ignition and also influences the rate of flame spread after ignition. Where a relative humidity of 50% to 60%, figured at 70° F. is maintained, fire-frequency probability is substantially reduced. This is further borne out by the fact that there are fewer fires in the summer when relative humidity is high. Higher humidity also results in better control of lap weights, which are directly affected by percentage of moisture in the fiber.

Armstrong Steam Humidifiers provide an ideal method of humidifying opener-picker rooms as well as other departments of your mill. The illustration above shows how they are connected into existing steam systems to provide accurately controlled humidification by introducing steam directly into the atmosphere. The small C-2 unit shown is capable of humidifying up to 40,000 cu ft; lists at only $120 complete with accessories and can be operated for about a penny a day per 1000 cu ft. Dependable, economical Armstrong Steam Humidifiers are sold on a basis of SATISFACTION OR YOUR MONEY BACK. For complete data send for a copy of Bulletin 1771 and the name of the Armstrong Factory Representative nearest you.

**Get YOUR COPY of "Humidification Cuts Picker-Room Fires" reprinted from August, 1948, Textile World. Free on request to:*

ARMSTRONG MACHINE WORKS
872 Maple Street, Three Rivers, Michigan

ARMSTRONG *Steam* HUMIDIFIERS
Easy to Install and Maintain . . Automatic . . . Economical



Lowers Cost

You can rely on the magic fingers of Foxwell Guiders to instantly check any side or serpentine motion of cloth. Selvedges are kept even automatically. Lowers cost and reduces seconds. Can be attached to machines, or mounted on floor stands. Operates on air pressure of 15 to 17 lbs. Also furnished with special compressor unit.

H. W. BUTTERWORTH & SONS COMPANY
Serving the Textile Industry Since 1820
Main Office and Works: Philadelphia 25, Pa.

Butterworth

A WOOD
Naturally Resistant
TO ACIDS, ALKALIES AND DECAY

Tidewater
RED CYPRESS

Tidewater Red Cypress serves better and lasts longer. It's natural resistance to acids, alkalies, etc. insures long and satisfactory results when used in vent stacks, pickling troughs, electroplating vats, etc. It's use under these conditions truly confirms its claim to being "The Wood Eternal".

If you have a particularly perplexing problem let us help you solve it. We invite inquiries concerning all types of tanks and vats . . . fully fabricated or partially fabricated.

FLEISHEL LUMBER COMPANY

4233 Duncan Ave., St. Louis 19, Mo., NEwstead 2100

NEWS ABOUT *Suppliers* (Continued)

of entertainment and dinner. Officers of the company are Olin Richardson, president; W. C. Mitchell, vice president and treasurer; Tom E. Curtis, chief electrical engineer; C. W. Walter, sales manager, Mechanical Div.; T. A. Burdeshaw, sales manager, Electrical Div.; Graham Mitchell, purchasing agent; Fred Allen, advertising manager; Chas. Glenn, maintenance engineer; Barney Bohannon, personnel director.

Monsanto Chemical Co., St. Louis, Mo., has appointed Fred G. Gronemeyer to the newly created post of chief engineer of the company's Organic Chemicals Div.

Sylvania Div., American Viscose Corp., New York, has added William F. McCabe and Donald H. Gilson to the New York sales staff. Jack E. Kempton has joined Sylvania as a salesman attached to the Chicago office.

A. E. Staley Mfg. Co., Decatur, Ill., has made the following appointments in its industrial sales division: Herbert J. Wallner, who will work out of New York (formerly with C. W. Abbott & Co., of Baltimore); James Turck, Jr., Hollywood, Calif., assigned a territory in the West Coast district (formerly with Stein Hall Co., Inc., New York); Walter C. Moore, who will work out of Decatur, Ill. (formerly with Shellabarger Mills, of Decatur).

Bocon Chemical Corp., New York, N. Y., has appointed Murielle H. North as manager in charge of advertising and public relations.

Link-Belt Co., Chicago, Ill., has elected Ralph M. Hoffman, president of Link-Belt Co., Pacific Div., San Francisco, to be a vice president of the parent company. He continues as president of the Pacific Div.

Atlas Mineral Products Corp., Mortztown, Pa.—Walter L. Sheppard, Jr., advertising manager, has resigned to become technical advisor to Tanks & Linings, Ltd., Droitwich, Worcestershire, England.

Hall Laboratories, Inc., Pittsburgh, Pa., has appointed E. W. Butzler, expert on boiler water conditioning and a member of its staff since 1928, to the new position of business manager of the firm.

Carbide & Carbon Chemicals Corp., New York, N. Y., has appointed Victor H. Boden as Eastern Div. sales manager. He joined Carbide in 1933.

ERNEST NATHAN, president of Warwick Chemical Div., of Sun Chemical Corp., New York, has been elected a vice president of the parent company. A. E. Horn, president of the A. C. Horn Co. Div., was also elected a vice president of Sun. The other officers of Sun Chemical are: Geo. W. Ullman, president; A. C. Horn, chairman of executive committee; William Recht, vice president.

Signode Steel Strapping Co., Chicago, has appointed A. J. Link as Chicago district sales manager. For the past seven years, Mr. Link has been sales representative in Indianapolis.

J. O. Ross Engineering Corp., New York, has added C. E. (Charlie) Blanchard to the staff of its Boston office for design and sales of special drying equipment. He was with B. F. Sturtevant Co., for the last 20 years.

Allegheny-Ludlum Steel Corp., Pittsburgh, Pa.—Almost 40,000 persons were guests of Allegheny-Ludlum when residents of its plant communities and some 200 customer companies joined the management and employees at Dunkirk, N. Y., and West Leechburg, Pa., in staging simultaneous open-house programs and anniversary celebrations. More than 22,000 persons registered while visiting the Dunkirk plant Oct. 19 and 20. Approximately 15,000 registered at the West Leechburg open house, a majority of them on Oct. 20, the previous day having been set aside exclusively for employees and their families. Since the visitors represented crowds more than twice the total population of the communities, the programs were considered highly successful.

Style 27

LANE
BASKET TRUCKS

Smooth - Light - Durable

Designed for
All Textile, Garment, and
Many Other Industrial Plants

W. T. Lane & Bros., Inc.

Mfrs.

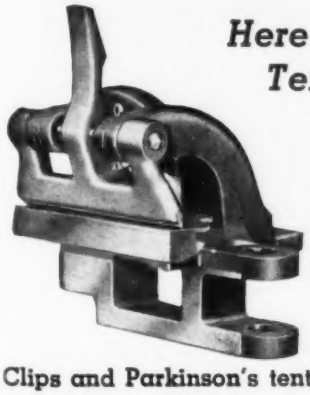
POUGHKEEPSIE, N. Y.

PARKINSON

TENTER CLIPS

PARKINSON

TENTER SERVICE



Here Is An Unbeatable Tenter Combination!

Parkinson clips and links can be furnished with sprockets, idlers or openers for adaptation to any frame.

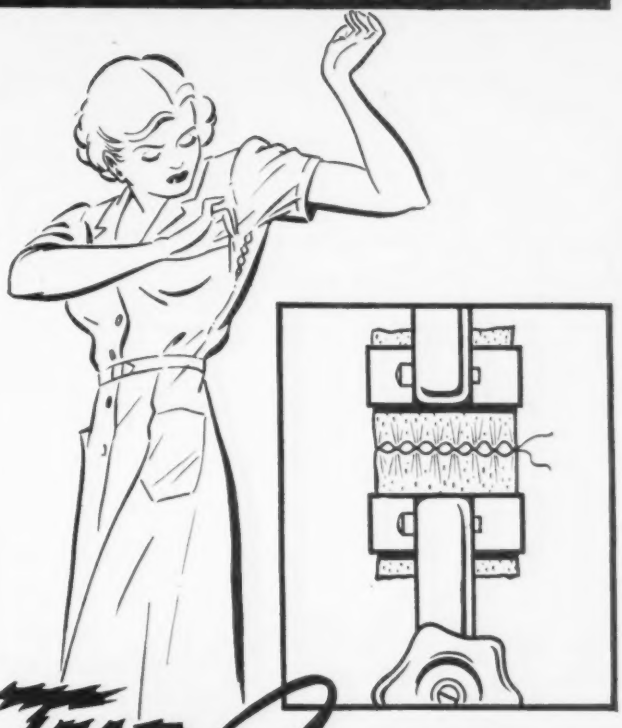
Parkinson repair service covers all makes of Tenter Clips and Parkinson's tenter survey service will give you without obligation an accurate picture of exactly what needs to be done to make your tenter operations 100% efficient!

Ask for special Parkinson Tenter Clip Folder Now!

EDWARD PARKINSON MFG. CO., INC.

387 Charles Street — Providence 4, R. I.

TESTED IS TRUSTED



TEAR Resistance

*Scott Tester Model J tests fabrics for tensile strength up to 500 lbs. The same Tester is convertible for Burst Test by Attachment W. World-standard tests, "picturized" graph results.

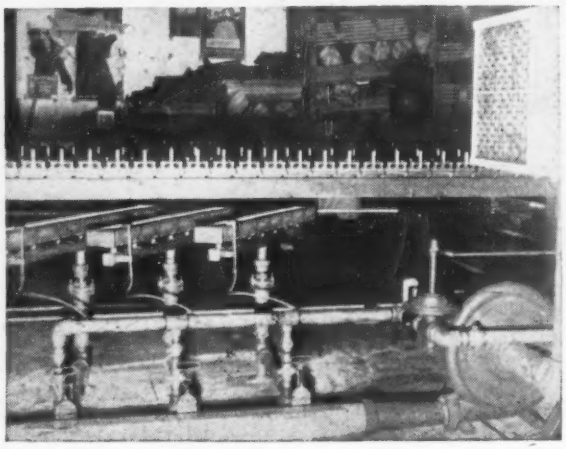
"Adequate Testing Always Pays"

* Registered Trademark

SCOTT TESTERS, INC.

95 Blackstone Street • Providence, R. I.

Standard of the World



RED-RAY BURNERS

Red-Ray Radiant Gas Burners installed under open tenter frame. Burners may be turned at angle for narrow goods.

WRITE FOR BULLETINS

RED-RAY MANUFACTURING CO., INC.
455 WEST 45th St., NEW YORK 19, N. Y.

For Maintained Shrinkage—Perfect Finish—Long Life

HUYCK

→COMPRESSIVE SHRINKAGE←

BLANKETS

for use in shrinking fabrics to the *"Sanforized"* standard by the Compressive Shrinkage process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

PALMER BLANKETS—also available for your special requirements.

Write for information or see our representative

F. C. HUYCK & SONS
KENWOOD MILLS
Albany 1, New York

NEWS ABOUT Mills

Cotton Mill News

Barbour Mills plant at Brockton, Mass., has been purchased by James Husted, of New York, N. Y. He will operate plant in present location as sales yarn mill.

Belle-Vue Mfg. Co., Hillsboro, N. C., has awarded contract for construction of bathrooms and installation of plumbing in mill village at approximate cost of $200,000.

Bladenboro Cotton Mills, Inc., Bladenboro, N. C., is installing 16 264-spindle, and six 228-spindle spinning frames in No. 3 plant. Company recently completed installation of 16 new cards, three new one-process pickers, six winders, and an 800-end ball warper.

Borden Mills, Inc., Kingsport, Tenn., has extensive modernization program going forward that will cost about $2,500,000. Company is replacing conventional machinery with Whitin Superdraft. Automatic elevator has been installed and other construction work is in progress.

Clinton Cotton Mills, Clinton, S. C., has water filtration plant under construction to serve both Clinton and Lydia Cotton Mills. Sewage disposal plant has been completed at Lydia Cotton Mills, as part of general improvement program. Combined cost of two projects will be approximately $275,000. Both mills are under same management.

Clover Spinning Co., Inc., Clover, S. C., has installed new comber-room machinery and made other changes.

Columbia Weaving Mills, Inc., Paterson, N. J., has closed contract with interests at Anniston, Ala., for construction of one-story building having about 15,000 sq. ft. of floor space, to be occupied under long-term lease as new branch mill with option to purchase. Erection is expected to begin soon. Cost reported over $100,000, with equipment.

Cone Mills Corp., Greensboro, N. C., has appropriated $2,000,000 to be used by the end of next year in first phase of $6,000,000 program of home modernization in four mill communities.

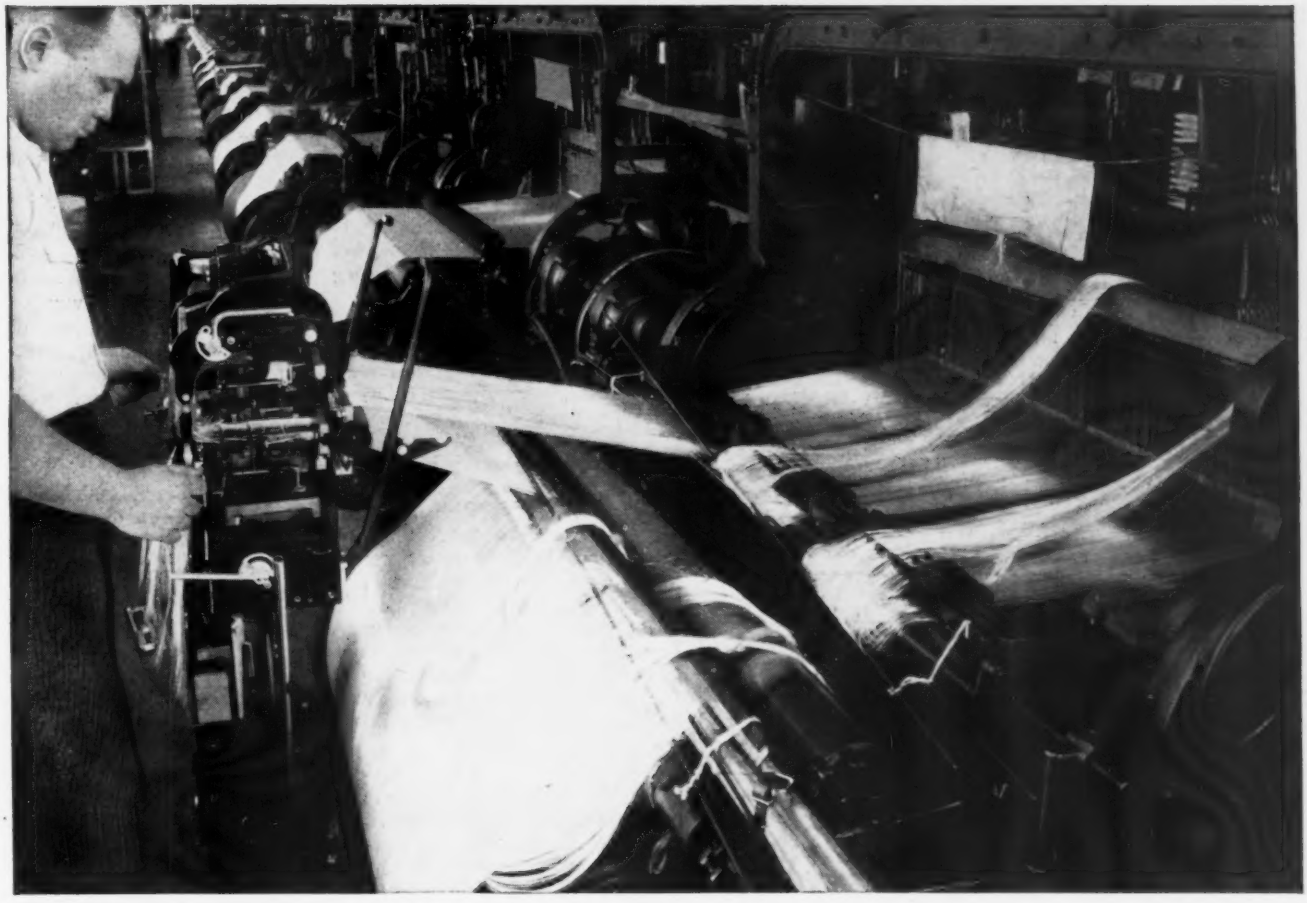
Gold-Tex Fabrics Corp., Rock Hill, S. C., has spent about $500,000 in capital improvements since company was purchased from Cutter Mfg. Co. two years ago. Largest single improvement has been completely new dyehouse.

Graniteville Co., Graniteville, S. C., has let contract to Daniel Construction Co., Greenville, S. C., for addition to mill at Vaucluse, S. C., reported to cost about $250,000 with equipment.

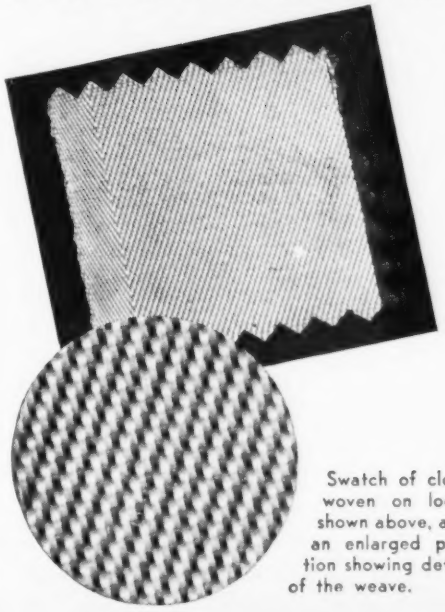
M. Lowenstein & Sons, Inc., has entered into contract to acquire controlling interest in Lane Cotton Mills Co., New Orleans, La. No change in management, personnel, or production policies of the Lane company is contemplated, it is said.

Maverick Mills, East Boston, Mass., plans construction of $4,000,000 fine-cotton-goods mill near Greenville, S. C. New plant will have 480 looms, approximately 28,000 spindles, and employ between 350 and 400 workers. Single-story, steel-and-brick building will have approximately 200,000 sq. ft. of space and will be air-conditioned. It will be located on 100-acre site on White Horse Road.

Morowebb Cotton Mills, division of Macanal Textile Corp., Dallas, N. C., has just completed building and improvement program started last February and cost more than $100,000. Two new building additions have been made to mill, and new machinery has been installed. As result of expansion, capacity of mill has been increased from 15,000 to 25,000 lb. production per week.



BARBER-COLMAN PORTABLE WARP TYING MACHINE RENEWS WARP IN LESS TIME THAN OTHER METHODS



Swatch of cloth woven on loom shown above, and an enlarged portion showing detail of the weave.

Here is a practical example of the savings to be gained from the use of a Barber-Colman Portable Warp Tying Machine in comparison with hand twisting-in or drawing-in. The tabulated data at the right shows that the machine ties in this synthetic warp in less than one-fifth the time formerly required for manual methods. The machine works directly in back of the loom, eliminating any necessity for removing, transporting, and resetting weaving elements. Warps for similar patterns but different color distribution can be tied as well as identical patterns. Machines are made for plain or leased warps, and there is a combination machine that can be changed in a few minutes to tie from either a flat sheet or an end and end lease. See your Barber-Colman representative for specific recommendations to fit your needs.

WARP REPLENISHMENT DATA	
100/40/3 Denier - Acetate	
6234 Ends	
135 Sley by 64 Picks	
6 Harnesses	
6 Banks of Drop Wires	
Preparatory, Tying-In, and Pull-Thru Time	1 hr. 10 min.

By Former Manual Method, Warp Replenishment Time was — 5½ to 6 hours

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

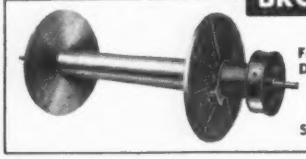
FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

MILTON

can help end your beaming problems!

MILTON steel and light-metal beams are putting an end to beaming headaches in hundreds of mills! Whether you need standards or specials . . . Milton's 16 years' experience is at your service with an all-important tradition of long-life and low maintenance cost for every beam!

BROADLOOM BEAMS



For C & K Looms (pictured) and Draper Looms (with let-off gear).

Steel barrels, cast iron flanges.

RIBBON LOOM BEAMS

Steel barrels, with your choice of adjustable head and fixed shaft (pictured) or fixed head with removable shaft.

Write for Catalog 45 (Steel) or Catalog 45-A (Light Metal)

MILTON MACHINE WORKS

MILTON, PENNA.

A NAME THAT MEANS DEPENDABILITY

in processing your nylon, silk and rayon yarns

OSCAR HEINEMAN CORPORATION

Division of Aetna Industrial Corporation

DONALD G. BREWSTER, *President and General Manager*

2701 ARMITAGE AVENUE, CHICAGO 47, ILLINOIS

SALES AGENTS

C. D. GOTT COMPANY • 513 CHATTANOOGA BANK BLDG. • CHATTANOOGA, TENNESSEE

THOMAS C. ASSHETON CO. • 11 WEST FORTY-SECOND STREET • NEW YORK 18, N. Y.

PEN WILSON COMPANY • 617 JOHNSTON BUILDING • CHARLOTTE, N. C.

NEWS ABOUT *Mills* (Continued)

Naumkeag Steam Cotton Co., Salem, Mass., which manufactures "Pequot" line of sheets and pillow cases, will build 28,000-spindle, 700-loom plant at Penrose, N. C., in Transylvania County. Company will also establish its own finishing plant.

Newberry Textile Mills, Newberry, S. C., has recently completed, from plans of Lockwood Greene Engineers, Inc., Spartanburg, S. C., enlargement of office building at mill. Top floor is for use as cotton-classing room, ground floor as office space, and basement for files. Entire building is air conditioned. Engineers have also made plans for installation of Draper looms to replace non-automatic looms on first floor of Mills No. 1 and No. 2, and for new power-wiring layout for individual motor drives on new installation.

Norris Cotton Mills Co., Cateechee, S. C., has started large-scale expansion and improvement program for mill and mill village. Contract has been let to Air Engineering Co., Charlotte, N. C., for air-conditioning system for mill. J. E. Sirrine Co. is engineer. Machine shop is to be enlarged and modernized. Total of 130 residences in mill village will have electric hot-water heaters and other equipment installed.

Ottaray Mills, Union, S. C., division of Deering, Milliken & Co., Inc., has begun construction of apparatus room and installation of air-conditioning equipment, which, together, will cost about $225,000.

Pinecrest Cotton Mills, Inc., Pine Bluff, Ark., has been incorporated and plans to begin immediate construction of large cotton mill. Initial investment in plant and equipment will exceed $1,000,000. Building will have more than 113,000 sq. ft. of floor space and will employ 250 operatives at start of operations. Structure will be financed by Industrial Foundation, Inc., Pine Bluff community organization, and will be erected on 21-acre tract.

Rangoon, Burma — Burma government has engaged Lockwood Greene Engineers, Inc., New York, N. Y., for construction of new 20,000-spindle cotton mill to be built at Rangoon.

Republic Cotton Mills, Chester, S. C., plans to sell 600 homes in mill village at Great Falls to employees.

Spartan Mills, Spartanburg, S. C., has completed installation of air-change and humidity-control system in weaving and spinning departments of No. 2 unit. Company is installing similar equipment in its No. 1 unit, with work being done by Fiske-Carter Construction Co.

Spatex Corp., Charlotte, N. C., has taken over former Hoskins plant of Textron Southern, Inc., and will place production entirely on combed lawns. Previously, the mill manufactured 60% combed and 40% carded lawns. Additional combers will be installed by Spatex. J. E. McCarvery, formerly superintendent of Thomaston Cotton Mills, Griffin, Ga., unit has been appointed general manager.

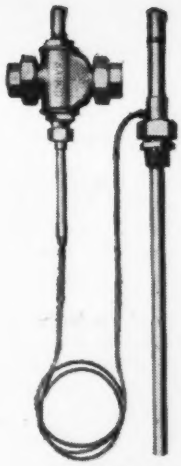
Springs Cotton Mills, Lancaster, S. C., has completed plans and purchased materials for new 40,000-spindle cotton mill at Lancaster. Robert & Co., Atlanta, Ga., is engineer.

Wamsutta Mills, New Bedford, Mass., is installing 32 new Whitin combers as part of modernization program. Orders have been placed for $1,000,000 worth of modern preparatory equipment. New opening machinery, drawing frames, and some spinning frames are included. Combers will be of type developed by Wamsutta and Whitin Machine Works.

Wool Mill News

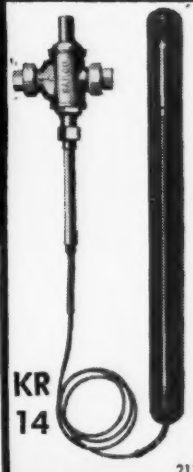
John Alden Woolen Mills, Inc., Worcester, Mass., has purchased machinery of Coe Woolen Co., also of Worcester, and will use to manufacture women's wear. C. John Abbott, superintendent of Coe company for last 18 years is now president.

Cocheco Woolen Mfg. Co., East Rochester, N. H., plans construction of large plant to be made of precast concrete panels. All manufacturing operations will be centered in the new plant. Old mill buildings on site will be remodeled and



SARCO TR-21 operates steam, water, brine and gas valves. Entirely self-contained and self-operated. No electricity, compressed air, etc., needed. Easy to install. For any temperature between 0 and 300° F. Electric controls also available. Catalog 600.

SARCO Temperature Control



SARCO KR-14 temperature regulator is a self-operated liquid expansion type control, packless and easy to install. Used for air conditioning, refrigeration, dryers, ovens, ducts and all types of industrial process work. Temperatures 0° to 300°F. ½ to 8". Catalog 600.

211

SARCO SAVES STEAM

SARCO COMPANY, INC.
Empire State Bldg., New York 1, N.Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

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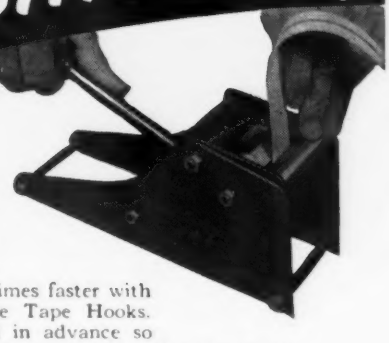
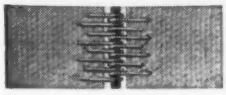
10 TIMES FASTER THAN STITCHING!



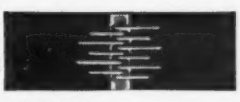
SPINDLE TAPE LACING EQUIPMENT



Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

CONDENSER TAPE LACING EQUIPMENT

Lace condenser tapes with Clipper No. 25 Condenser Tape Hooks. Clipper laced tapes, prepared in advance, can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving.



CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN

Clipper BELT LACING EQUIPMENT

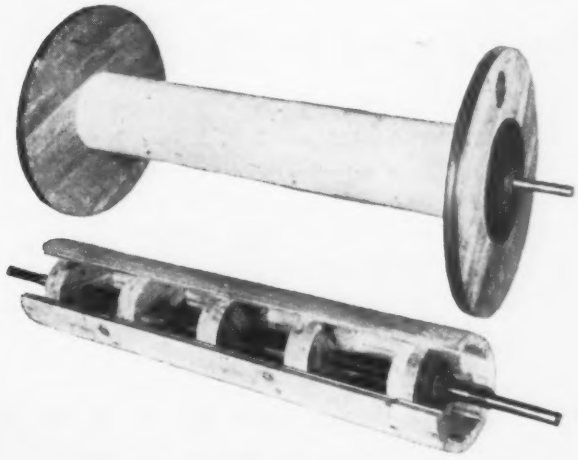
WARPER BEAMS

FOR COTTON AND RAYON

Adjustable Heads for Loom Beams

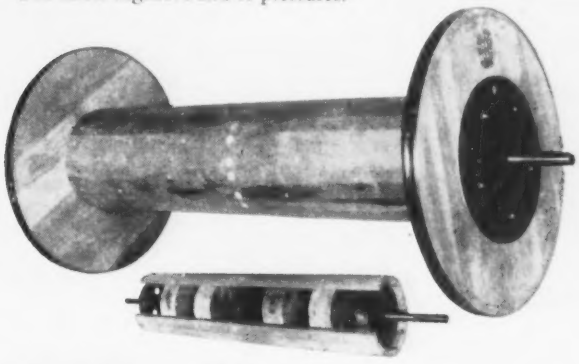
TYPE KXR FOR COTTON WARPS

For all counts of cotton, to run on all makes of cotton warpers. Standard widths 51½" and 54½". Also made up to 110". Accurately balanced for running at speeds up to 1,000 yards per minute. This same beam is suitable for all counts of worsted and woolen yarns. Full length solid steel shaft and five broad supports.



TYPE HC RAYON WARPER BEAMS

To withstand the pressure of acetate and Nylon warps, type HC is built with large diameter rock maple barrel, with maximum reinforcement shown below, accurately balanced for top speeds. Available to run on all makes of Warpers. Four heavy plywood and 3 iron inside supports keep barrel true under highest build of pressures.



ADJUSTABLE LOOM BEAM HEADS

Light, unbreakable, adjustable to any width. Exclusive Allen clamping device assures fixed position and precise alignment. Diameters up to 32".

ALLEN COMPANY
156 RIVER ROAD
NEW BEDFORD, MASS.

Representatives in all Textile Localities and all Principal Countries of the World

Good Warps are made **on Good Beams**

We make Warper Beams for Cotton and Synthetics • • • *Also Loom Beams*

BARNES SERVICE *Consulting Engineers*
TO THE TEXTILE INDUSTRY FOR OVER ⅓ CENTURY
Surveys—Reorganizations—New Plant Developments for Cotton, Wool, and Synthetic Yarn and Cloth Processing, Bleaching, Dyeing, Printing and Finishing.
★ Plant Appraisals ★ Mechanical and Operating Surveys—New Methods ★ Scheduling and Planning ★ Work Load Studies, Job Analysis and Evaluation, with Incentive Plans ★ Standard Cost Installations ★ Cost Control Methods
Labormeter Burden-meter Waste-meter
SERVING THE TEXTILE INDUSTRY OF THE WORLD FOR OVER A THIRD OF A CENTURY
BARNES TEXTILE ASSOCIATES, Inc.
10 HIGH STREET, BOSTON 10, MASS.
318 MONTGOMERY BLDG., SPARTANBURG, S. C.

The WAMSUTTA MILLS, New Bedford, Massachusetts, was recently asked for a statement covering Barnes Textile Associates, Inc. activities. The following is an extract from this letter:

"We have used practically all of the services rendered by the Barnes Textile Associates, Inc. since 1917, including cost systems, operating studies, machinery layout, etc., and cannot speak too highly of the results obtained.

"We have every confidence in their ability to intelligently solve any of the engineering problems connected with the textile industry."

WET PROCESSING AGENTS
BURK-SCHIER
FOR EVERY TEXTILE APPLICATION
BURKART-SCHIER CHEMICAL CO
CHATTANOOGA, TENNESSEE
MANUFACTURING CHEMISTS FOR THE TEXTILE INDUSTRY

THE MONTGOMERY COMPANY
ESTABLISHED 1871
WINDSOR LOCKS, CONN.
BARE ELECTRIC CONDUCTOR & RESISTANCE TINSEL CORDAGE
DECORATIVE TINSEL — LAME — THREADS — CORDS — LAMINETTES
NOVELTY YARNS

NEWS ABOUT *Mills* (Continued)

used for storage. Early in year, company completed large additions to plant at Gonic, N. H.

Model Spinning, Inc., Cumberland, R. I., has been chartered with incorporators consisting of Jean O. Tessier, Muriel Hermitage, and John O. Tessier, Jr., for purpose of manufacturing and marketing wool yarns.

Paragon Worsted Co., Providence, R. I., has foundations in for a new 1-story warehouse of brick and cinder-block construction. Estimated cost is $35,000; location, Manton Ave.

Sweetwater Woolen Mills Co., Sweetwater, Tenn., is name of former American Textile Woolen Mills, following purchase of plant by Shade Murray. Mill will eventually resume operation under new ownership.

Renfrew Woolen Mills, Arthur St., Renfrew, Ont., is considering erection of addition to plant. Alterations to provide more office space are to be included in plans.

Synthetic Mill News

Associated Rayon Corp. — Contrary to the report that appeared in TEXTILE WORLD, Nov. '48 p. 298, United Rayon Mills, Elberton, Ga., has not changed its name to Associated Rayon Corp. Associated Rayon Corp. is the new name of United Rayon Corp., a change made to avoid confusion with other companies doing business under a similar name. Last March the company field a registration statement with the SEC to permit it to float a $10,000,000 stock issue. After the registration statement becomes effective, Associated Rayon Corp. hopes to establish and operate a viscose filament rayon and staple fiber plant.

Cadillac Textile Mills, Inc., has roof on a new $100,000 addition to its mill on Broad St., Valley Falls, R. I. Rowley Construction Co., Pawtucket, has awarded the spinkler contract to Grinnell Corp., Providence.

Century Ribbon Mills, Inc., has sold two plants at Carlisle and Patton, Pa., to Lawrence Schiff Silk Mills. This is in line with Century Ribbon's plan to give up weaving silk ribbons and concentrate on viscose and acetate ribbons.

Dominion Spinners, Ltd., 130 Gregoire St., St. Johns, Que., is having extension erected to mill to provide needed steam-boiler room.

E. I. du Pont de Nemours & Co., Waynesboro, Va., has plans for addition to local plant for expansion in acetate rayon department. Award has been made for structural steel framing. Cost reported over $150,000.

Gold-Tex Fabrics Corp., Rock Hill, S. C., has modernization program under way in mill, and company is remodeling village. About $500,000 has been spent on plant improvements since company purchased mill from Cutter Mfg. Co. two years ago. Largest single phase of program is plant's completely new dye house.

Haynesworth Mill, Anderson, S. C., has installed looms and other equipment at mill. New rayon-weaving mill will eventually have 300 looms.

Jefferson Mills, Pulaski, Va., is expanding its nylon throwing plant to cost approximately $500,000. Contract has been awarded to C. M. Guest & Sons, Greensboro, N. C. Biberstein & Bowles, Charlotte, N. C., are architects and engineers. Present 60,000 sq. ft. of floor space will be increased to 122,000 sq. ft. with productive space increased by about 60%.

A. G. Mercer Co., Lonsdale, R. I., has been chartered with incorporators consisting of A. Grierson Mercer, Donald W. Mercer, and William M. Mackenzie for purpose of manufacturing, dyeing, and finishing of laces, silks, and textiles of all kinds.

Robbins Cloth Mills, Inc., Robbins, N. C., plans construction of one-story addition for expansion in weave and cloth rooms.

William Skinner & Sons, Holyoke, Mass., recently celebrated its 100th anniversary with an "open house." At the same time, $500,000 program for building and equipping new weave shed was announced.

Valdese Mfg. Co., Valdese, N. C., is considering plans to spin nylon yarns for hosiery and

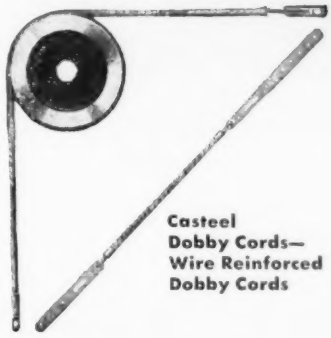
THE BULLARD CLARK COMPANY

Northern Division
Danielson, Connecticut

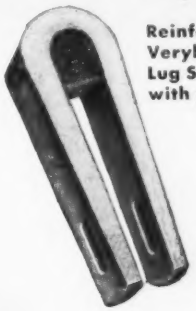
E. H. JACOBS

Southern Division
Charlotte, North Carolina

LOOM JACOBS NEEDS

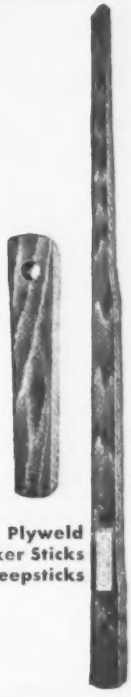


Casteel
Dobby Cords—
Wire Reinforced
Dobby Cords

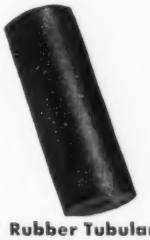


Reinforced
Verybest
Lug Straps
with plug

Hairy and
Oak Leather
Check Straps



Plyweld
Picker Sticks
Sweepsticks



Rubber Tubular
Spindle Bumpers

Leather, Canvas
and Rubber Bunters

Jacobs "Verybest" Hairy or Oak Leather
Straps and Rubberized Fabric Straps

Washers
Hickory Picker Sticks
Holdups
Canvas Strapping
Bunters
Lug Connectors
Race Plates

Top Clearer Boards
Standard Binders
(plain or covered)
Crank or Pitman Arms
Under Clearer Roll Sticks
Jack Sticks
Rubber Temple Rolls

Box Fronts
Lease Rods
Laysword Reed Caps
Dobby Sheaves
Parallel Blocks
Cloth Roll Blocks
Rubber Super Pickers

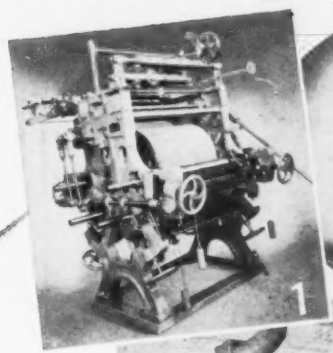
Leather Spindle Bumper Straps
Leather Pickers
Canvas Box Pickers
Rawhide Pickers
Canvas Reinforced Sweepsticks
Rubber Sand Roll Covering
Plastic Dobby Sheaves
Plyweld Power Sticks

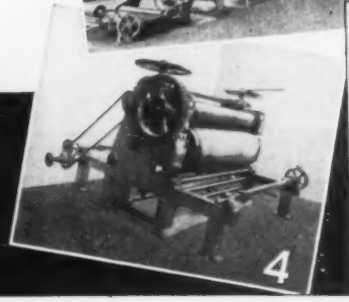
WALDRON Processing Machines

For Textile

COATING • TREATING
PRINTING • EMBOSSING
COMBINING • FESTOONING

and other processing operations



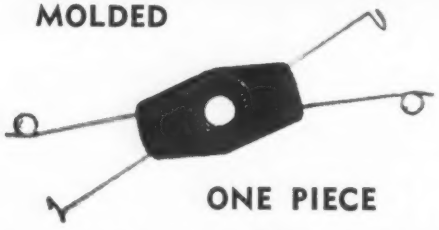


1 Waldron 4 Color Engraved Roll Printer.
2 Waldron Reverse Roll Coater.
3 Waldron Machine Line for Plastics Treating.
4 Waldron Centennial Embossing Machine.

WALDRON machines are part of the picture of the fascinating new materials that are setting new standards of converting skill. Beauty, utility and durability are being imparted to fabrics with the aid of these modern machines. Investigate the possibilities for your product. Write for detailed information.

JOHN WALDRON CORP.
NEW BRUNSWICK, NEW JERSEY
BUILDERS OF QUALITY MACHINES SINCE 1827

MOLDED



ONE PIECE

New! No Lubrication!

NYLON FLYER BLOCKS

McHales new Nylon Flyer Blocks eliminate faults of previous types. One piece, no loose parts, rust proof, no sharp edges. Bore molded to fit spindle, no lubrication needed—smooth running—no bind on spindle. Blocks balanced to insure uniform tension. Lighter than other blocks of comparable size. No tools or jigs to rewire. Wiring is Faster than with other types. Mill tests for 19 months have proved their excellence. Made in 2 colors, black and white and 3 types.

M. J. McHALE CO.

136 W. Market St., Scranton 8, Pa.

NO SHARP EDGES — NO LOOSE PARTS

FISHER FUNCTIONAL

ROLLING TRUCKS

Fisher Vulcanized Fibre Trucks feature improved reinforcement where needed, both inside and outside. Thread guard casters and tapered head rivets. Built to avoid damage to trucks or to machinery on contact.

FREE FOR THE ASKING. Your copy of our new illustrated brochure "Fisher Functional Textile Trucks." Write today!

FISHER MANUFACTURING CO.

MATERIALS HANDLING EQUIPMENT TEXTILE

BOX 244 -- HARTWELL, GEORGIA

NEWS ABOUT *Mills* (Continued)

sportswear. Mill now makes carded cotton knitting yarns.

Martin Weiner Co., New York, N. Y., is engaged in expansion program that will enlarge plant division. Company is also assembling personnel for newly established plain-fabrics division. Additions to weaving mill at Altoona, Pa., and to its finishing and converting plant at Clifton, N. C., have also been made. Firm also will install 154 looms at mill at Cheraw, S. C.

Knitting Mill News

Artglow Hosiery Co., Paterson, N. J., has plant addition under construction to make room for new machinery.

Clyman Hosiery Co., 600 1st Ave. N., Minneapolis, Minn., plans one-story knitting mill, 30x156 ft., at 317 1st Ave. N. B. Mayeron, Kasota Bldg., Minneapolis, is engineer.

E-Z Mills, Inc., Cartersville, Ga., has completed addition to plant to enlarge knitting department, as well as sewing department. New knitting and sewing equipment has been installed for expanded production. Knitting department is air conditioned, and fluorescent lighting has been installed throughout mill.

Globe Mills, Inc., has started foundations for large addition at West Leesport, Pa. New building will house finishing department and will permit expansion of knitting department in old building. One-story brick and steel annex is expected to be in use by February.

Gulf Coast Hosiery Mills, Inc., Brooksville, Fla., newly organized, has been chartered with capital stock at 250 shares, $100 par. Incorporators are Richard P. Steidte and William F. Singer.

McCrary Hosiery Mills, Inc., of Ashboro, N. C., and **Ramseur Hosiery Mills, Inc.,** of Ramseur, N. C., have merged. No change in operations is planned at present. Both mills manufacture women's full-fashioned hosiery. The officers of the company are C. W. McCrary, president; K. Alexander, vice president; W. H. Redding, vice president in charge of sales; J. F. McCrary, treasurer, and T. H. Redding, secretary.

Monarch Knitting Co., Page St., St. Catherines, Ont., has just awarded contract for construction of addition to plant. Structure will be one-story, 80x90 ft., with walls of concrete block.

Newton Knitting Mills, Newton, N. C., has completed expansion program costing about $120,000. Brick addition, 197x200 ft., houses new finishing plant. Offices have been built between addition and original building.

Ripon Knitting Works, Ripon, Wis., plans new one-story addition for warehouse. Auler, Irion & Wertsch, Inc., Oshkosh, Wis., is architect.

Schuylkill Valley Mills, Inc., Spring City, Pa., has asked bids for erection of one-story addition, reported to cost over $80,000, with equipment. Muhlenberg, Yerkes & Muhlenberg, Ganster Bldg., Reading, Pa., is architect.

Sheer Silk Hosiery Mills, Ltd., Abenaquis St., Sherbrooke, Que., has let contract for erection of two-story extension of brick and concrete construction.

Van Raalte Co., Inc., Franklin, N. C., has begun production of nylon full-fashioned hosiery. First 10 machines have been installed for manufacture of 15-denier, 51-gage hosiery. In past, plant has been producing gloves and mending hosiery made at company's other units.

Zabel Hosiery Mills, Wyncote, Pa., has been sold to Jack R. Cooper, Philadelphia wholesale distributor. Sale of full-fashioned hosiery mill included inventory, good will, and machinery. Name of mill will be changed to Fine-Spun Hosiery Mills. It will continue to produce 51-gage, 30-denier and 45-gage, 30-denier stockings.

Dyeing & Finishing Plant News

American Finishing Co., Memphis, Tenn., has installed near the railroad siding a 12,000 gal. aluminum storage tank into which will be unloaded

Flash Dry SAMPLES . . .
TO DETERMINE MOISTURE PERCENTAGE

Use the Moisture Teller
in the plant for moisture control in material processing or for laboratory moisture determinations.

Accurate

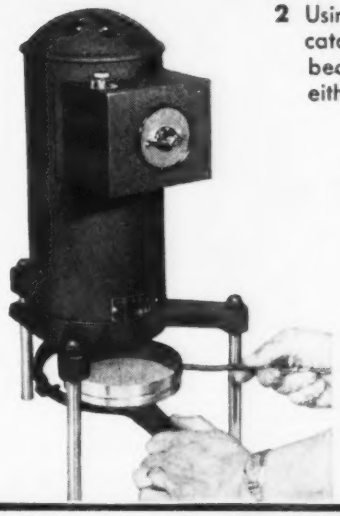
1 Calibration is not required since moisture is determined gravimetrically.

2 Same accuracy is obtained as in oven drying.

Fast

1 Moisture in the sample is quickly converted to vapor which is carried out through the filter cloth bottom of the sample pan by an adequate stream of hot air.

2 Drying time is only 2 minutes for some materials and up to 15 minutes for materials difficult to dry.



Simple

1 No calibration or calculations.

2 Using the new computing beam balance and a catch weight, the operator merely balances the beam before and after drying and reads directly either the percentage of solids or moisture.

Flexible

1 Moisture Teller drys one sample at a time or may be used for the rapid drying of several samples simultaneously.

2 Moisture Tellers are available in several models which accommodate sample pans having diameters of 2¾", 5¼" and 8" with depths of 1", 2", 4" and 12", for samples of from 1 to 500 grams.

3 The samples may be chemicals, liquids, sands, textiles, foods, tobacco, feed, wool, rubber, soap products, solids or fats in liquids and dairy products.

Write for specifications and prices to Dept. "M".

5116

Harry W. DIETERT Company
9330 Roselawn Ave. Detroit 4, Michigan
CONTROL EQUIPMENT • SAND • MOLD • MOISTURE • CARBON • SULFUR

For perfect card grinding

DRONSFIELD'S PATENT MOTOR-DRIVEN FLAT GRINDING MACHINE No. 207

★ Designed for grinding revolving flats—four simultaneously—dismounted from the cards. Absolute precision in setting is the aim.

★ Dronsfield's Patent-Traverse Wheel Grinder, No. 120.

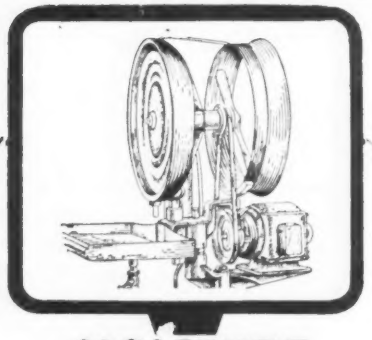
Dronsfield's Improved Grinding Roller No. 112.

TRADE MARKS: "ATLAS" AND "DRONSFIELD'S"

DRONSFIELD BROS. LTD.

OLDHAM . ENGLAND

ALL ENQUIRES TO : JOHN HETHERINGTON & SONS, INC. 72, LINCOLN STREET, BOSTON . MASS.



MOISTURE

WHERE and WHEN YOU NEED IT

The new, improved SOUTHWORTH HUMIDIFIER, is now ready for delivery.

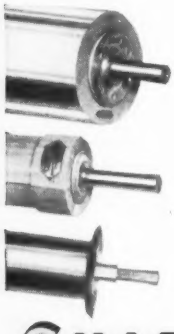
Featuring its famous, sensitive, individual control, this economical and efficient unit is specifically designed to put moisture where it is needed—when it is needed. Operates at the slightest change in atmospheric conditions and maintains, without fluctuation, any desired percentage of humidity.

Southworth's Engineering Department is available for your free consultation.

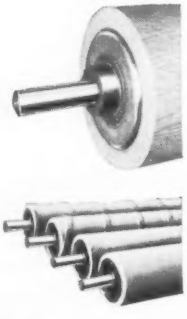
Write, wire or phone today!

SOUTHWORTH MACHINE CO.

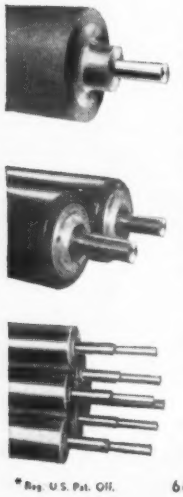
30 WARREN AVE. TEL. 4-1424 PORTLAND, ME.



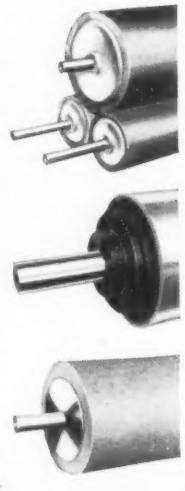
MANY INDUSTRIAL ROLL PROBLEMS are solved by using



SHAF-TITE* ROLLS



Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.



SEND FOR NEW CATALOG NO. 48

Most complete publication of its kind

Industrial Roll Division

RODNEY HUNT MACHINE CO.

66 Maple Street, Orange, Mass.

*Reg. U.S. Pat. Off.

NEWS ABOUT *Mills* (Continued)

freight shipments of acid. Four 50-gal. aluminum tanks have been installed in the plant at locations where the acid is to be used to make greater efficiency.

Aspinook Corp., Jewett City, Conn., printing, dyeing, bleaching, finishing, and shrinking will consolidate all units of company as single corporation. Properties include Hampton Print Works, East Hampton, Mass.; Union Bleachery, Greenville, S. C.; Lawrence Print Works, Lawrence, Mass.; and Arnold Print Works, Adams, Mass.

Bervick Mfg. Co., 351 West 48th St., New York, N. Y., textile printing, has leased space in building at 54 Clark St., Newark, N. J., having about 15,000 sq. ft. of floor space, and will occupy for plant.

Dundee Mills, Griffin, Ga., has completed new dye plant and work has been started on installation of equipment. There will be two continuous dyeing machines, one new and the other revamped from sulphur dyeing. There will be two hot tenter frames, including one new one. It is estimated that when equipment is installed, plant will have a potential capacity of 800,000 to 1,000,000 yd. per week. Dundee is also installing new continuous open-width bleaching line which will parallel present rope method. Bleachery will have capacity of approximately 2,000,000 yd. per week. New dye plant and improvements in bleachery are part of $750,000 expansion program.

Excelsior Mill No. 4, worsted finishing plant for **Deering, Milliken & Co.,** on Eighteen Mile Creek between Clemson, S. C., and Pendleton, S. C., is expected to be completed and ready for operation on or before Feb. 28, 1949. Daniel Construction Co., contractor, began work on Oct. 4. Building will contain 140,000 sq. ft. of floor space. Separate power plant, pump house, and filter plant will be constructed so that it can be doubled in size. Finishing plant will have one temporary end to permit easy addition of extension. Cost of project is understood to be about $3,000,000.

French Dyeing & Finishing Corp., Laconia, N. H., has commissioned Prescott & Erickson, Laconia architect, to prepare plans for new dye plant with basement. Project will be started this winter.

Iredell Finishing Mills, Inc., Statesville, N. C., has been chartered with authorized capital stock of $100,000. D. Van Horn, Mrs. Florence Van Horn and R. A. Collier, all of Statesville, are subscribers.

Lee Dye Works, Inc., Philadelphia, Pa., plans six months' modernization and expansion program to cost $250,000. Installation of new-type preboarding machinery, air-conditioned boarding department, and enlargement of floor space are expected to expand company's processing of women's full-fashioned and seamless hose from 30,000 to 50,000 doz. pr. weekly.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., has spent about $2,000,000 in general plant improvements and expansions since end of war.

Uncas Printing & Finishing Co., Inc., Mechanicsville, Conn., has been incorporated with capital of $50,000 to succeed to local mill of Uncas Finishing Corp., and will take over at once. Production will be continued without change.

Walker Dyeing & Finishing Co., Inc., 110 Chace St., Fall River, Mass., has been incorporated with 120 shares of stock, no par value, to operate mill. Robert C. Walker is company president.

Miscellaneous Mill News

International Ramie Corp., W. E. Clayton, president, San Francisco, Calif., has announced plans for construction of $2,000,000 textile mill somewhere in California. Site has not yet been chosen, but building is expected to start early in 1949. Machinery for mill will be built in California under International Ramie Corp. supervision.

Sun-Set Cord, Inc., Providence, R. I., has been chartered with capital of 500 shares of stock, no par value, to manufacture webbing and cordage specialties. Eugene T. Lachapelle, 12 Pinecrest Dr., Pawtucket, R. I., is attorney and representative.

Stepping forth, with confidence

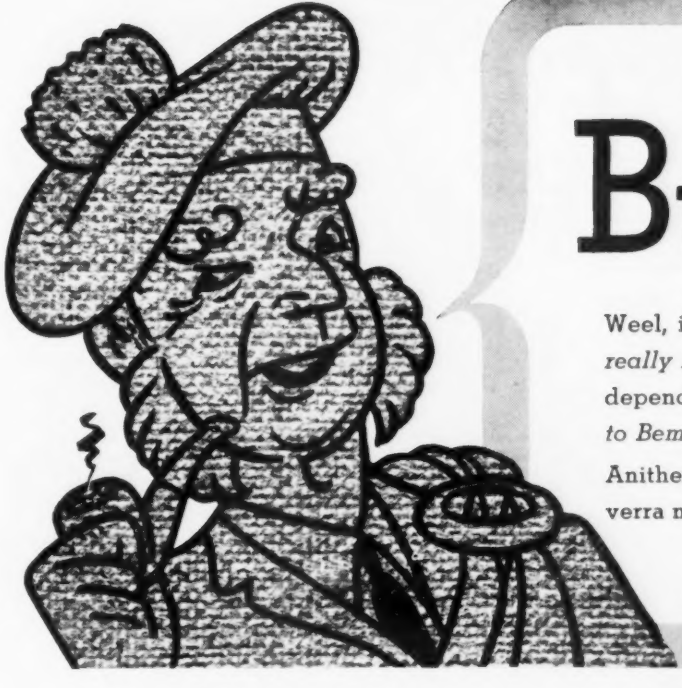
. . . and so does every lady, if her legs are encased in sleek, sheer, beautiful hosiery, finished with *DuraBeau* (the "film of beauty and protection").

"Leg consciousness" is natural with the modern well-groomed lady, and that is why she demands the best in hosiery,—and the best means lovely hosiery that is made *even lovelier by DuraBeau.*

Then, too, when hosiery is finished with *DuraBeau,* it offers extra resistance to spots, snags and runs,— and thus gives "miles more wear."

DuraBeau
Reg. U. S. A. and Canada
TEXTILE FINISHES

SCHOLLER BROS., INC. • Mfrs. of Textile Soaps, Softeners, Oils, Finishes • Collins & Westmoreland Sts., Phila., Pa. • St. Catharines, Ontario, Can.



BUYING Bur-r-rlap?

Weel, it's wise and thrifty to deal with folks who *really know* bur-r-rlap*... folks you know you can depend on. So for whatever grade you need . . . *look to Bemis!*

Anither important point . . . There's a Bemis plant verra near you for better sairvice wherever you are.

*Each year Bemis determines the grading of burlap produced by the Indian jute mills. Bemis' grading is accepted by producers and users alike as the standard for burlap quality. This acceptance as the "supreme court" of the industry comes from Bemis' long and unequalled experience as importer, converter and distributor of burlap.

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BEMIS BRO BAG COMPANY

HEAT WATER QUICKER AND 25% CHEAPER

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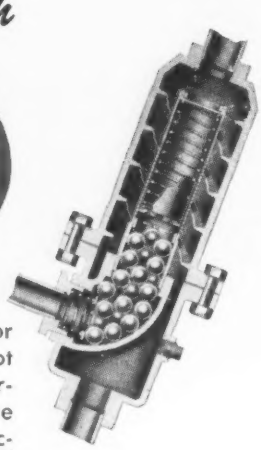
Pick

INSTANTANEOUS STEAM INJECTION HEATERS



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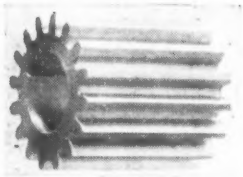

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PAY ROLL CONTROLS WORK LOAD STUDIES

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RALPH E. LOPER CO.

GREENVILLE, S. C FALL RIVER, MASS.

NEWS ABOUT *Men*

Hans Jost has been elected president and director of Hafner Fabrics Corp., to succeed **Henry A. Hafner,** who has become president of Hafner Associates, Inc., Long Island City, N. Y.

E. Albert Philips has resigned as president and general manager of American Fabrics Co., Bridgeport, Conn., to become chairman of the board. **Harry Merdinger,** formerly secretary, has been elected president. **John E. Kohler,** assistant treasurer, will become comptroller and continue present duties. **Russell E. Reuther** succeeds Mr. Philips as general manager and will remain assistant secretary.

Charles D. Orth, of Burlington Mills, Greensboro, N. C., was elected president of the Carolina Industrial Editors Council at the annual meeting held in Asheville. **Vernon Foster,** of Spartan, Beaumont, and Startex Mills at Spartanburg, S. C., was elected secretary; **Miss Lelah Nell Masters,** of Cone Mills Corp., Greensboro, was named treasurer. **Miss Margaret Sharp,** of Pelzer Mills, Pelzer, S. C., and **Otis Marlowe,** of Fielderest Mills, Spray, N. C., were named to the six-member board of directors.

Frank D. Cheney, a director of Cheney Bros., who has been with the company since 1900, has been elected chairman of the board, succeeding the late Clifford D. Cheney.

Frank S. Holt, president of Holt Mfg. Co., Burlington, N. C., has joined staff of Madison Throwing Mills, Madison, N. C.

G. W. Johnson, formerly vice president and general manager of Plymouth Mfg. Co., McColl, S. C., has been elected president of company succeeding the late John K. Whitaker. **Harold J. Starke,** of Hesslein & Co., New York, N. Y., parent organization of Plymouth company, has been elected to succeed Mr. Johnson as vice president of Plymouth company. Also elected to new post is **S. P. Monroe,** who becomes assistant to President Johnson.

Bert G. Gross has been named president of Kingly Fabrics, Inc., New York, N. Y.

R. A. Hartman and **J. A. Berlin** were recently elected vice presidents of Munsingwear, Inc., Minneapolis, Minn. **Laurens D. Dawes,** controller, was also elected secretary; and **Arthur D. Hyde,** vice president in charge of research, was made a director to succeed **James G. Bennett,** resigned.

Freeman J. Daniels, of Daniels, Perkins & Daniels, New York attorneys, has been added to board of directors of Erwin Cotton Mills Co. at meeting of board just held at Durham, N. C.

Perry E. Moore, senior partner of Robert Moore & Co., New York, has been elected treasurer of the Wool Associates of the New York Cotton Exchange. He is also treasurer of the cotton exchange.

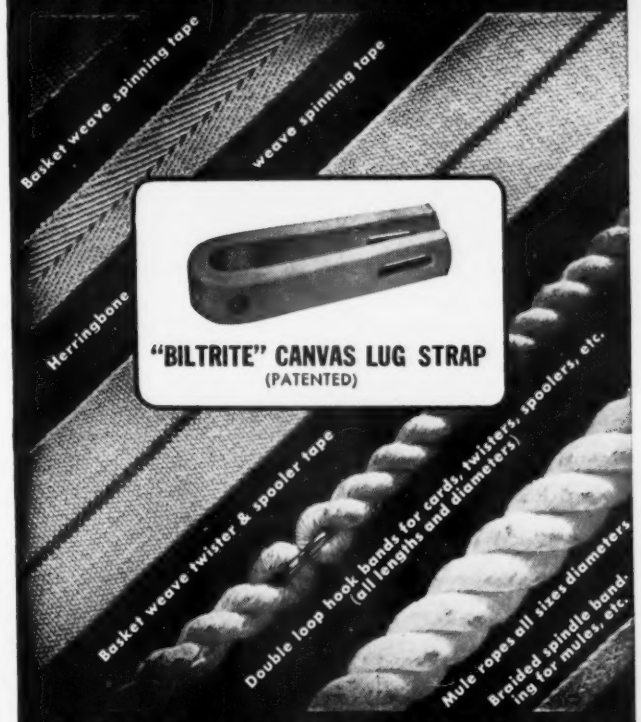
Boris J. Warkow has become associated with Native Laces & Textiles, New York, in an executive capacity to assist heads of various divisions, in the development, creating, and sales of fabrics for the women's ready-to-wear and men's wear industries.

A. Anthony Dreyspool has been appointed head of sales to the manufacturing trades for Wamsutta Mills, New York. He has been with Springs Cotton Mills and M. Lowenstein & Sons.

Harry F. Blend has been appointed manager of the men's wear Dept. of William Whitman Co., Inc., effective Nov. 1. **Frank E. Leaycraft,** who has been manager of the department for many years, is relinquishing the active direction but will continue to serve the company in a consulting capacity.

Palen Flagler has joined the advertising department of Dan River Mills, Inc., New York, as assistant advertising manager to work with Lesley Browder, advertising manager, on all phases of the company's steadily ex

LAMBETH PRODUCTS
FOR SPINNING, TWISTING, SPOOLING, WEAVING


Basket weave spinning tape
weave spinning tape
Herringbone
"BILTRITE" CANVAS LUG STRAP
(PATENTED)
Basket weave twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes all sizes diameters
Braided spindle banding for mules, etc.

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NEW BEDFORD, MASS., U. S. A.

ALL STANDARD RINGS— *plus* EADIE

You get COMPLETE ring service and unbiased counsel here where we make all standard styles, plus the exclusive Eadie speed rings. These lubricated rings deserve your special consideration because if they fit any of your work, you have a lot to gain.

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Cotton yarns, single and ply
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Spun rayon—yarns and warps

The ALDON SPINNING MILLS *Corp.*
TALCOTTVILLE, CONN.

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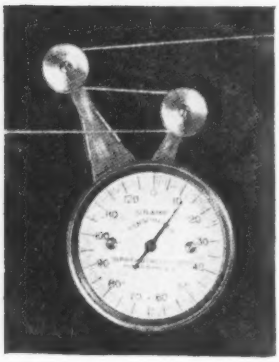

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We have developed a method of by-passing the considerable sudden fluctuations that sometimes occurred in tensometer readings, to give a steady recording in all uses.

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enables you to detect faulty tension in warping, winding, and quilling. It slips handily into your pocket and has a knurled case to prevent its slipping out of your hand accidentally.

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Dye-resistant and boil-proof, permanent, inexpensive, quick and easy to use.

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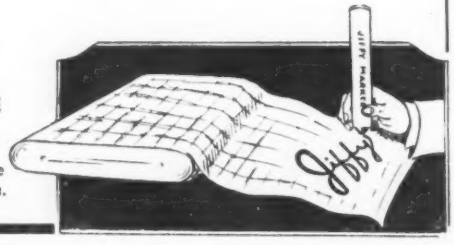

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COMPLETE PLANT DESIGNS · APPRAISALS · VALUATIONS · LABOR SAVING STUDIES · RESEARCH & REPORTS · PROCESS ANALYSIS

GREENVILLE, SOUTH CAROLINA

NEWS ABOUT *Men* (Continued)

panding advertising and promotional program.

Solomon Barkin, director of research for the CIO Textile Workers Union of America, has been appointed as a consultant to the United Kingdom Mission of ECA headed by T. K. Finletter. He will investigate the progress of the textile manufacturing industry in the U. K. under the ECA program.

William I. Hudson, Jr., has been named sales-promotion manager for Reeves Bros., Inc., New York. Mr. Hudson has represented the company in the Southeast, with headquarters in Atlanta, Ga. **S. L. Lewis, Jr.,** formerly general sales manager of Eagle & Phenix Mills, Columbus, Ga., a subsidiary of Reeves Bros., Inc., has been named general sales manager for the firm.

Thomas C. Wagstaff, of Raleigh, N. C., has joined the public-relations department of Burlington Mills, Greensboro, N. C. He will become editor of a plant newspaper.

Charles F. Myers, Jr., director of financial services for Burlington Mills, Greensboro, N. C., has been appointed member of the board of trustees of the Burlington Foundation, a charitable trust established by the Burlington Mills.

Arthur Ernst has been promoted by Textron, Inc., New York, to be general manager of Textron drapery fabrics, in charge of both merchandising and sales.

Kenneth B. Cook has been named general manager with supervision of all production operations of Wamsutta Mills, New Bedford, Mass. Mr. Cook is now general production manager of Crown Mfg. Co., Pawtucket, R. I., of which **Joseph H. Axelrod,** Wamsutta president, also is president. Arrangements have been made for Mr. Cook to retain position with Crown organization and at same time assume direction of Wamsutta production.

Henry J. Forman is now assistant production manager at Morschner Dye Works, Newton Upper Falls, Mass.

N. Gaines has resigned as head of printing for Pilgrim Piece Dye Works, Brooklyn, N. Y., to become associated with Normandy Print Works, New Bedford, Mass.

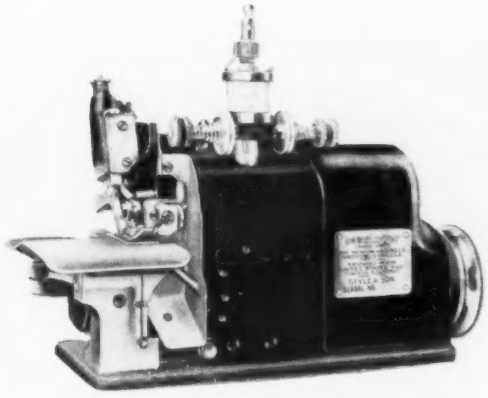
Ernest Pfeiffer has assumed new duties as head of fabric development department of Colonial Mills, Inc., Clarksville, Va. He succeeds **George Groh,** resigned.

John Warnke has been appointed assistant resident manager of Webster Mills, unit of American Woolen Co., Webster, Mass.

Walter Danhoff is newly elected superintendent of Lydia Cotton Mills, Clinton, S. C. He was formerly with Monarch Mills, Union, S. C.

Thomas A. Hunter will become purchasing agent for Burlington Mills Corp., Greensboro, N. C., filling position left open by resignation of **J. Saunders Williamson. C. M. Shaffer,** who headed purchasing department for former May-McEwen-Kaiser group of hosiery mills.

***LOWELL TEXTILE INSTITUTE** alumni, New York chapter, held their fall meeting last month. At head table, left to right, Louis J. Othote, of J. W. Valentine Co., past New York president; Professor A. Edwin Wells, secretary of parent alumni association; Kenneth W. Fox, president of the Institute; and Louis S. Zisman, of Fabric Chemicals Co., retiring New York president. Elected to chapter office were Norman E. Johnson, managing editor of "American Dyestuff Reporter," president; Irving Smoller, vice president; and Arthur M. Currier, of Latta, Currier Co., secretary-treasurer.*



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MERROW **HIGH SPEED**

OVEREDGING, OVERSEAMING AND HEMMING MACHINES

For Use on Knitted and Woven Wear of all Kinds

Quality Results—High Production

Convenient Handling

Minimum Time-Out for Adjustment

or Repair—Low Upkeep Costs

Obtain Maximum Quality Production by Using a Machine Suitably Arranged for Your Work—Our Distributors or Our Direct Representatives Are on Call to Advise You on Suitable Machine Arrangements for Various Results and Proper Care and Operation of Machine.

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Acme Products

for seamless hosiery knitting

Speak for Themselves

Up-To-Date Machines

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STEAM FINISHING MACHINERY

Standard Throughout the World

For finishing all types of knitted outerwear fabrics—tubular, flat knitted and woven.

Kastrinsky designs and builds a complete line of a size and type to meet your requirements. These machines are easy to operate with unskilled labor and maintenance costs are low.

You can see them in operation in many of the largest plants in this country and abroad. Tell us your requirements—there's no obligation.

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the uses of Durene yarns are as limitless as the imaginations of those who style with them

smooth, smooth running Hampton Durene

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Now operating in over 200 Textile Mills in U. S.
This winder gives you 4 big advantages:

1. Eliminates waste
2. Increased yardage capacity of shuttle package
3. Less winding expense
4. Compactness — space saving

Write today for full information

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WILKES BARRE PENNSYLVANIA HARRISBURG

NEWS ABOUT *Men* (Continued)

now part of Burlington, will serve as Mr. Hunter's assistant.

Frank Vardeman, head of cotton department of Bibb Mfg. Co., Porterdale, Ga., plant has resigned, and L. H. Smith, of Columbus, Ga., plant of same company, will succeed him. **Roscoe Reynolds,** who has been assistant to Mr. Smith, will be put in charge of Bibb's cotton department at Columbus.

Harold S. Moyer has been appointed assistant to general manager of Natona Mills, Dallas, Pa., unit of Native Laces & Textiles, Inc. He will be in charge of knitting operations. **Charles J. Hess,** superintendent of knitting operations at Natona plant, will continue in that position.

John Gregory will be general manager of new plant of Cranston Print Works Co., now under construction near Asheville, N. C.; and **Louis Bain** will be industrial engineer.

George J. Alles has been appointed purchasing agent for American Viscose Corp., at office in Philadelphia, Pa. He succeeds **J. LeRoy Shade.**

Edward T. Taylor, purchasing agent for North Carolina Finishing Co., Salisbury, N. C., since 1938, has been elected secretary and assistant treasurer of company, succeeding the late E. J. Gallagher. **Hardy B. Lentz, Jr.** has been named assistant secretary and **V. L. Beck** has been appointed to succeed Mr. Taylor as purchasing agent.

C. C. Long, connected with Waldensian Hosiery Mills, Inc., at Valdese, N. C., for four years, has been appointed personal administrator. He formerly held position in accounting department.

J. E. McCarvey, former superintendent of Thomaston Cotton Mills, plant at Griffin, Ga., has been named general manager of Hoskins Mill, Charlotte, N. C., unit of Textron Southern, Inc., which was taken over Sept. 25 by Spatex Corp. **R. L. Reir,** formerly with Harden Mfg. Co., Harden, N. C., is secretary of Spatex, and **D. Jordan** is treasurer. New management will concentrate on production of combed yarns, with new equipment to be installed to replace plant's 40% carded yarn capacity. Mill has 30,000 spindles and 580 looms.

French Campbell has resigned his position with Bloom Mills, Gastonia, N. C. Prior to joining Bloom, Mr. Campbell was for four years general manager of Carter Mills, Lincolnton, N. C.

E. B. Blackstock has resigned as assistant manager of Clover Spinning Co., Clover, S. C., to accept position with mill at Cherryville, N. C.

E. C. Jouret has resigned as superintendent and designer at Northfield Mills, Northfield, Vt., to go to Sutton Mills, North Andover, Mass.

Jack Lacey has become overseer of carding at Berkshire Woolen Mills, Pittsfield, Mass., succeeding **Raymond Gates** who has accepted similar position with Bigelow Sanford Carpet Co., Thompsonville, Conn.

Edward Leahy has resigned as overseer of carding at Lobsitz Mills, Nutley, N. J.

J. F. Plexico has become night superintendent of Lancaster plant of Springs Cotton Mills, Lancaster, S. C. He was formerly manager and superintendent of Linwood Cotton Mills, LaFayette, Ga. **Russell Fennell,** formerly superintendent, has been appointed to succeed Mr. Plexico at Linwood plant.

L. O. Timberlake, formerly of Charlottesville, Va., has become superintendent of weaving for Rosenstein Bros., Paterson, N. J.

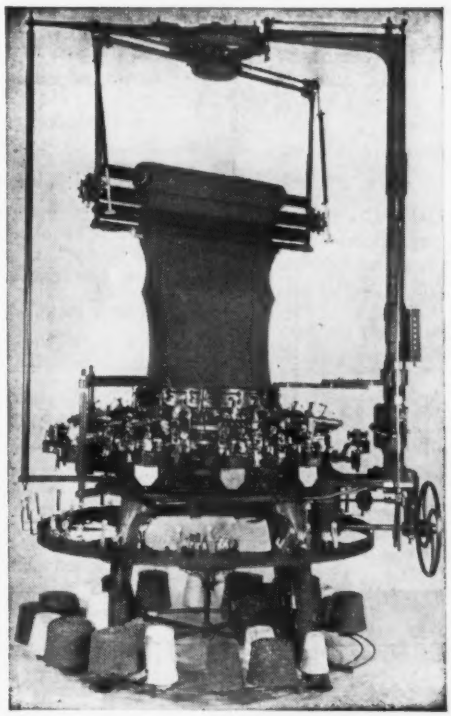
E. H. de Vaudreuil has become overseer of dyeing at Stephen Spinning Co., Manchester, N. H.

Ted Broyles has been appointed overseer of carding at Lumberton and Mansfield plants of Mansfield Mills, Inc., Lumberton, N. C.

Clarence W. Cashion has assumed new duties as superintendent of Delaine Worsted Mills, division of Associated Spinners, Inc., Gastonia, N. C.

L. W. Coleman has become overseer of spinning at Lumberton and Mansfield units of Mansfield Mills, Inc., Lumberton, N. C.

Richard C. King, who has been doing work at Cone Mills, Greensboro, N. C., as a mem-



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High Production
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The Tompkins Model S-1 is the finest in high speed spring needle knitting machines. Set up at factory for any class of work desired. Feeds and gages may be quickly changed to produce a wide range of cloth —from rugged overcoat material to fine underwear fabric. Furnishing wheels, visual-signal electric stop motion and cylinder lighting insure perfect cloth in large volume. Interchangeable cylinders—16" to 35" and gages from 5 to 50 provide maximum flexibility.

Established 1846

Over a century of continuous service to the knitting industry throughout the world

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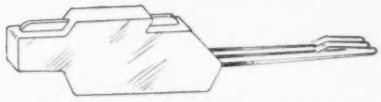
LEAD CASTING SPECIALISTS

LET US RE-NEEDLE YOUR KNITTING MACHINES



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and old type Raschel machines. (We snug fit your bars, and fill them at no cost.) We build needle, sinker, and guide molds, at our new machine shop.

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FULL FASHION KNITTING MACHINES

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MURDOCK Bobbin Holders

Two exclusive features Affording Long Life

1. Automatic - bobbin holders equipped with holding wings electrically hardened all the way through.
2. Holding wings held positively in position by skeleton washer—no sliding around.

We make holders for ¾" to 2½" bobbin heads, including large-package wood and paper bobbins, also special bobbins. Duplex holders take both automatic and non-automatic bobbins.

Holders for all types of mules, frames, twisters and winders.

MURDOCK & GEB CO., Franklin, Mass.
Manufacturers of Bobbin Holders for Over Fifty Years

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KNITTING MACHINES

meet the needs for Speed— for Quality and Low Cost

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is versatility . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

Let us tell you why —and how . . . just **WRITE**

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Spring Latch Needle
KNITTING MACHINERY

AMERICAN...the yarn for you, runs more efficiently, produces a finer product, easier to sell...more profitably

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Prince George Hotel
28th St., East of 5th Ave., N.Y.C.

New *Showrooms for Attractive Displays.*

NEWS ABOUT *Men* (Continued)

ber of James F. Downey & Staff, consulting engineers, White Plains, N. Y., will become head of industrial engineering department of Cone Mills, Greensboro, N. C., on Jan. 1.

Walter McGaha, Greenville, S. C., has become superintendent of weaving at Beaunit Mills, Inc., Rockingham, N. C.

L. H. Lowman has become assistant superintendent of new No. 2 plant of J. & J. Spinning Co., Maiden, N. C.

F. C. Mosteller has resigned as superintendent of Rhyne-Houser Mfg. Co., Cherryville, N. C., to become associated with mill at York, S. C.

C. E. Heath has become chief engineer for Easley Mills, Easley, S. C. He was formerly with Woodside Mills, Greenville, S. C.

Thomas A. Hunter is the new purchasing agent for Burlington Mills Corp., succeeding **J. Saunders Williamson,** resigned.

Milton D. Crawley has become general overseer of No. 7 unit of Erwin Cotton Mills Co., Neuse, N. C. He was formerly assistant superintendent of Brodnax Cotton & Rayon Mill, Brodnax, Va.

Hesden Tozier, for 26 years dyer at Anderson Mills of American Woolen Co., Skowhegan, Maine, has retired.

Clarence W. Washion has been made superintendent of plant of Delaine Worsted Mills at Gastonia, N. C.

George M. Wright, Jr., has assumed new position as assistant superintendent of Gaffney Mfg. Co., Gaffney, S. C. Mr. Wright recently resigned as superintendent of plant No. 1 of Republic Cotton Mills, a division of J. P. Stevens & Co., Inc., Great Falls, S. C.

James J. Bramhall, Jr., has resigned position with Carter Knitting Mills, Lincolnton, N. C., to become overseer of dyeing at HollyKnit, Inc., plant at Mount Holly, N. C., subsidiary of American Yarn & Processing Co.

OBITUARY

Austin Cheney, 71, director of the board of Cheney Bros., Manchester, Conn., died Oct. 5 at Boston, Mass. In 1923 he was vice chairman of the American Silk Mission to Japan and China, and in 1924 vice chairman of the raw silk classification committee to grade raw silk. From 1933 to 1940 he headed a joint silk classification committee both hosiery and fabric manufacturers.

Henry Ittleson, 77, founder in 1908 and lately chairman of the board of C.I.T. Financial Corp., New York, died Oct. 27. Beginning in 1928, eight old-line factoring houses were purchased and combined into the three existing C.I.T.-owned factoring houses, Commercial Factors Corp., Meinhard, Greeff & Co., and William Iselin & Co. In 1946 and 1947 these three organizations handled a business volume just short of one billion dollars in each year.

Irving K. Hessberg, 53, president of Van Raalte Co., Inc., New York and for two terms (1941 to 1943) chairman of the board of the National Association of Hosiery Manufacturers, died recently. He began his business career in 1911 as a clerk with Julius Kayser & Co. He joined Van Raalte in 1917, where he was made a director in 1928, and president in 1933.

John M. Miller, Jr., 80, chairman of the board of Dan River Mills, died recently in Richmond, Va. Mr. Miller, a banker and financial specialist, was 10 years ago elected as chairman of the then Riverside & Dan River Cotton Mills.

Max A. Freschl, 61, president of Hosiery Distributors, Inc., died Oct. 10. Prior to founding the hosiery distributing firm in 1937, Mr. Freschl had been associated for 28 years with Holeproof Hosiery Co., which was founded by his father.

Thomas F. Martin, 66, president of Martin Dyeing & Finishing Co., Bridgeton, N. J., died recently. Mr. Martin had been associated with the company since 1905, and had been president since 1933, when he took over that office following the death of his father. The company is now in the process of liquidation.

William S. Brown, 53, president of Houghton Top Co. and

Machine and Hand Knitting

Yarns

[French-Bradford]

for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

★

Complete color assortments

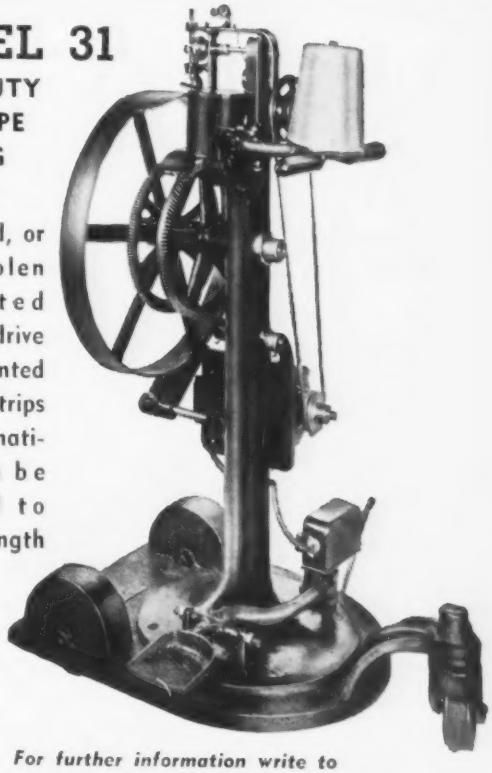
American Woolen Company

225 Fourth Avenue New York

MODEL 31

HEAVY DUTY GEAR TYPE SEWING HEAD

for piece-end, or tacking woolen and worsted cloth. Motordrive—motor mounted on column, Strips cloth automatically. Can be equipped to make any length of stitch from 3/8" long down to 7 stitches per inch.



For further information write to

DINSMORE MFG. CO.
SALEM, MASS.

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McGraw-Hill Industrial Mailing Lists are a direct route to today's purchase-controlling executives and technicians in practically every major industry.

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THE LOYAL T. **IVES** COMPANY EST. 1874

SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines; Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY

WE'VE LEARNED A LOT IN OUR 50 YEARS

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell Service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes.

Catalog on request.

W. E. CALDWELL CO.
INCORPORATED
2060 Brook St. Louisville, Ky.

Caldwell TANKS AND TOWERS

Announcing New Model PD-1

MOISTURE REGISTER

for

SCOURED WOOL
COMBED WOOL (tops)
WOOL YARN (skeins)
WOOL BLANKETS

BULK COTTON

Deep, accurate, immediate moisture content readings

Now you can quickly and easily test moisture content in the range of 0-15% (wet basis). Specifically designed for the textile industry, Model PD-1 makes use of electronic penetration field to test material to average depth of three inches as compared to depth of one inch heretofore.

Duplicable readings are insured by microswitching arrangement which lights meter dial when correct pressure for test is applied. Calibrations for scoured and combed wool, wool yarns and wool blankets are available with instruments.

Similar model available for bulk cotton.

Write to day for complete details. Specify type of material to be tested. Moisture Register Company, Dept. G, 133 North Garfield, Alhambra, California.

ELECTRONIC MOISTURE REGISTER

The standard in moisture testing

MARKEM MACHINE COMPANY KEENE, N. H.

Are You Using the

MARKEM MODEL 10A Fabric Marker?

Prints complete details of trademark, size, fabric specifications and other information directly on material. May also be fitted for shade or matchmark identification. Write for details.

Trucks

Made any size or style wanted. Center and end wheels. Water proofed and chemically resistant finish.

Self-oiling and no grease can drop on the floor. Used for all kinds of fine yarns, wet or dry.

Bottoms finished 13/8". Sides and ends finished 1 1/4", 1 1/8", 1" or 7/8", whichever desired. Made from maple, poplar, cypress or fir lumber.

WRITE US TODAY.

FRANK BAILEY

CEDAR BROOK P. O.
CAMDEN CO., NEW JERSEY

NEWS ABOUT *Men* (Continued)

secretary of Houghton Wool Co., Boston, Mass., died Oct. 1. He had been associated with the Houghton organizations for last 35 years.

Frank Nasmith, former managing director in the United Kingdom for Universal Winding Co., of Providence, R. I., died late in November.

Richard D. Wood, Sr., 71, president of Millville Mfg. Co., Millville, N. J., died recently. He had been president of the firm, with offices in Philadelphia, since the death of his father in 1926, and had served as vice president for a number of years previously.

Joseph P. Hoffner, 65, founder and president of the Hoffner Rayon Co., Philadelphia, Pa., died Oct. 7. A graduate of the Philadelphia Textile Institute, Mr. Hoffner was one of the pioneers in the rayon textile industry in Philadelphia. He also operated a plant in Quakertown, Pa.

Francis Hove, textile manufacturer, died Oct. 15 at Sherbrooke, Que. Mr. Hove owned Nasonville Woolen Co. at one time, and had been associated with W. & K. Co., Providence, R. I.; South Bend Woolen Co., South Bend, Ind.; and Paton Mfg. Co. of Sherbrooke, Que.

Flint Garrison, special consultant to the Wholesale Dry Goods Institute and publisher and editor of *Garrison's Magazine*, New York, died Oct. 21. He had served as the institute's director general from 1929 to 1937.

Nathan Durfee, 81, treasurer of the former American Printing Co., Fall River, Mass., died Oct. 6.

Gen. Charles F Tillinghast, 77, who until his retirement was vice president and managing director of Textile Finishing Machinery Co., Providence, R. I., died Oct. 2.

John O. Gant, formerly vice president and treasurer of Jewell Cotton Mills, Thomasville, N. C., and a director of Glenn Raven Hosiery Mills, Glenn Raven, N. C., died recently.

Clinton F. Payne, 66, treasurer and general manager of George W. Payne Co., Pawtucket, R. I., died Oct. 15. Mr. Payne was treasurer of Olney & Payne, Inc., Pawtucket, R. I.

Emer C. Nation, vice president and branch manager of Sylvania Div., American Viscose Corp., Atlanta, Ga., died recently.

Max B. Kassche, 52, one of the oldest employees of Sandoz Chemical Works, Inc. in point of service, died Oct. 2. He was with Sandoz since 1919, when Sandoz took over the dyestuff department of his father's firm, F. Bredt & Co.

Francis C. Steere, New England sales manager for Lestershire Spool & Mfg. Co., Saylesville, R. I., died Oct. 16.

James Arthur Hayes, pioneer executive in the rayon industry, died Oct. 1 at Boothbay Harbor, Me. Mr. Hayes was born in Randolph, Me., and until his retirement was plant manager of American Viscose Co., Philadelphia, Pa.

Edward J. Gallagher, 52, Salisbury, N. C., secretary of the North Carolina Finishing Co., died recently following a short illness.

Howard M. Mason, 60, general manager of Roxbury Carpet Co., Saxonville, Mass., died Oct. 24. Born in Pawtucket, R. I., he had been with the company for 25 years.

Karl Baberadt, 69, superintendent of Wyoming Textile Co., Wilkes-Barre, Pa., died Aug. 21. He had been for years general manager for Louis Roessel Co., Hazelton, Pa., before coming to Wyoming Textile Co.

John D. Fleming, 58, a member of the Organic Sales Development Dept., Monsanto Chemical Co., died at St. Louis, Mo., Oct. 12.

A. L. Hayes, 58, metropolitan New York representative of Laurel Soap Mfg. Co., Philadelphia, for over 26 years died recently.

Arthur H. Wyman, 65, manager of Allis-Chalmers general machinery district sales office at Cleveland, Ohio, since 1925, died Oct. 5.

John V. Cassidy, 56, died Oct. 15. Mr. Cassidy was a long-term employee of M. T. Stevens & Sons Co., owners of the Peace Dale Mill, Peace Dale, R. I. and at the time of his death was foreman of the combing room in that mill.

A New

SPRAY-APPLICATION TECHNIQUE

for

TEXTILE PROCESS COMPOUNDS

MINOTINTS

Oil-base fugitive tint for all synthetic and natural fibers.
Identification—Lubrication—Conditioning

RAYON OILS	•	SS BASE OIL
TINTINOLS		MINEROL
LYNOL		MEON

BRETON OILS FOR WOOL

Accurate trouble-free application of spraying oils and tints by the new pressure method which eliminates pumps and moving parts. Simplification is progress and ours is backed by 74 years' experience.

INQUIRIES INVITED

BORNE SCRYMSER COMPANY

Offices and Works ELIZABETH, N. J. | Established 1874 | Southern Warehouse CHARLOTTE, N. C.

ROME SOAP MFG. CO.

MANUFACTURERS OF

Textile, Laundry

and

Special Soaps

ROME, N. Y.

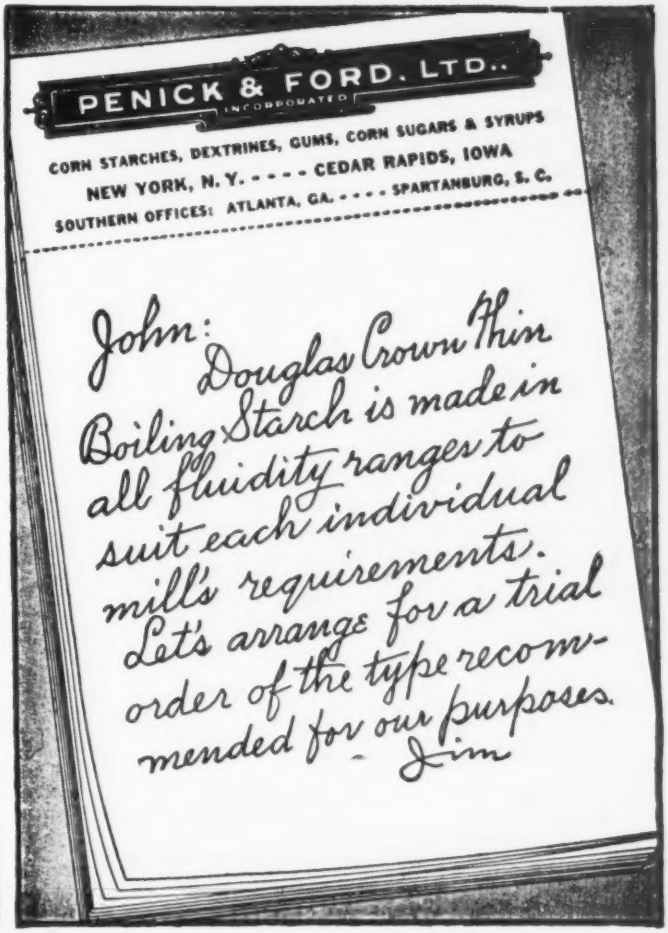
WRITE US FOR SAMPLES AND QUOTATIONS

TENTERING and DRYING MACHINERY

For further information see McGraw-Hill Textile Catalogs

D. R. KENYON & SON

RARITAN, NEW JERSEY


PENICK & FORD, LTD.
INCORPORATED
CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS
NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA
SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.
John: Douglas Crown Thin Boiling Starch is made in all fluidity ranges to suit each individual mill's requirements. Let's arrange for a trial order of the type recommended for our purposes.
Jim

"Tailored"

TO MEET YOUR SPECIAL KNITTING REQUIREMENTS!

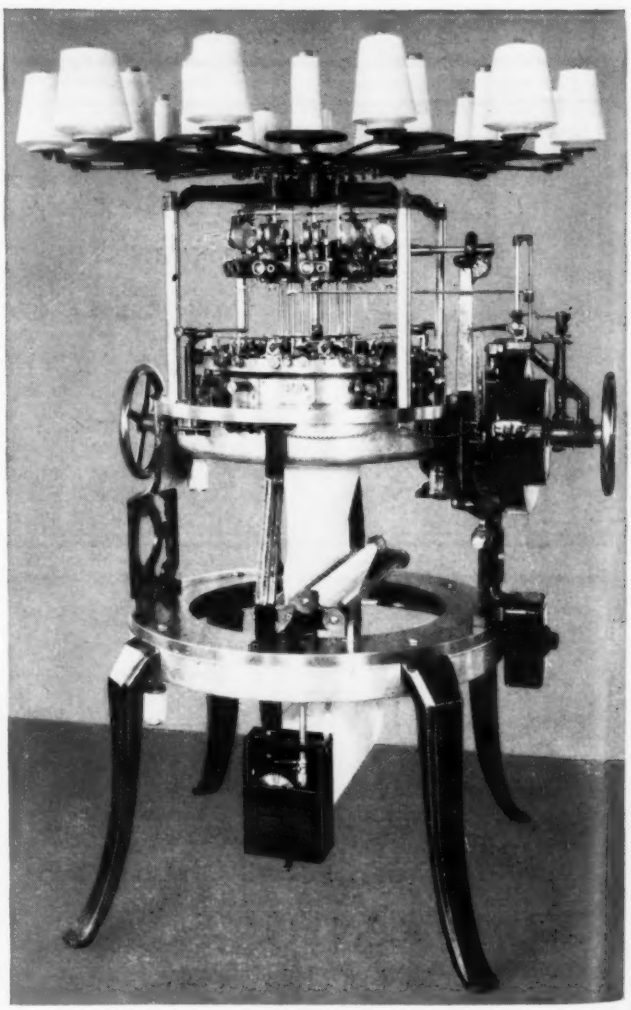
WILDMAN

SPRING NEEDLE MACHINE

Yes Sir! whether you are knitting wash cloths or the most intricate garment our engineers can adapt this Wildman to your most exacting needs.

And whatever it does for you, it will deliver greater volume than you ever thought possible; it will permit practically unlimited style opportunities.

This Wildman machine feeds yarn under such even tension that uniformity of fabric is a natural result. The ability to tie cone to cone without stopping the machine is another advantage. May we tell you about its many other features and its adaptability to your plant and product?



WILDMAN MFG. CO., Norristown, Pa.

Only POWELL makes a *complete* line of valves for the TEXTILE INDUSTRIES

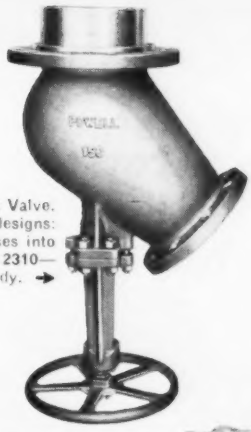
More than a hundred years ago Powell adopted a policy. This was to make valves *only* and to make *every kind* of valve that industry might require.

And through the years, strict adherence to this policy has built such a complete line of valves that today there's a Powell Valve for every known industrial flow control service. This includes Bronze and Iron Valves of all required types and designs; Cast Steel Valves of all types in pressure classes from 150 to 2500 pounds; and Corrosion Resistant Valves—including many special designs—made in the widest variety of metals and alloys ever used in making valves.

The Wm. Powell Co., Cincinnati 22, Ohio

DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

Fig. 1793—Large 125-pound Iron Body Bronze Mounted O. S. & Y. Gate Valve.



Flush Bottom Tank Valve. Available in two designs: **Fig. 2309**—disc rises into tank to open; **Fig. 2310**—disc lowers into body. →

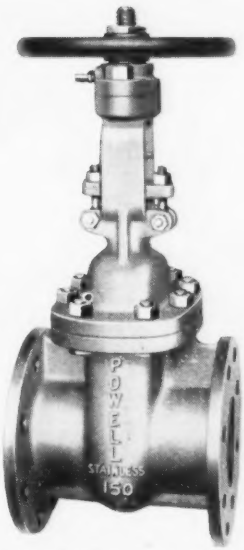


Fig. 2453-G — Standard 150-pound Stainless Steel O. S. & Y. Gate Valve.

Fig. 375 — 200 - pound Bronze Gate Valve with renewable "Powellium" nickel-bronze disc.

Fig. 150—150-pound Bronze Globe Valve with renewable composition disc.

Fig. 1708 — 200 - pound Bronze Globe Valve with renewable stainless steel seat and regrindable renewable "Powellium" nickel-bronze disc. →

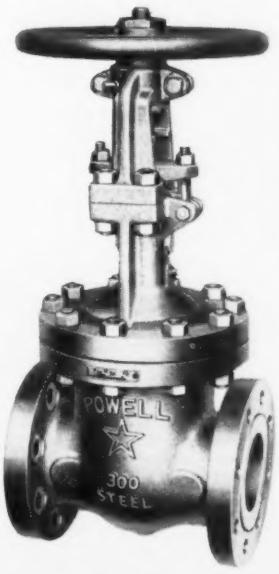


Fig. 3003—Class 300-pound Cast Steel O. S. & Y. Gate Valve.

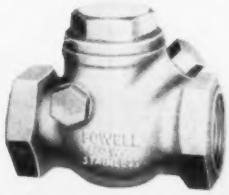


Fig. 1847—200-pound Stainless Steel Swing Check Valve.

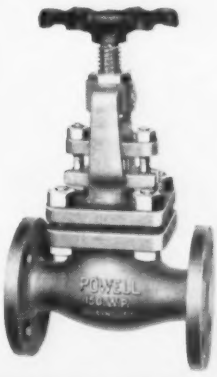


Fig. 1969—150-pound Stainless Steel O. S. & Y. Gate Valve.

Fig. 1832 — 200-pound Stainless Steel Gate Valve.

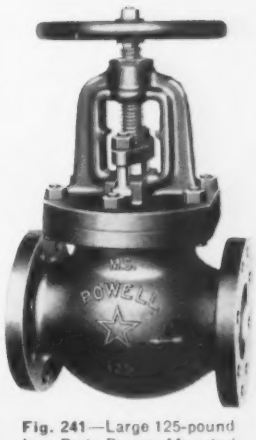


Fig. 241—Large 125-pound Iron Body Bronze Mounted O. S. & Y. Globe Valve.

POWELL VALVES

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UNDISPLAYED RATE:

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PROPOSALS, 90 cents a line an insertion.

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DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

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The advertising rate is $8.00 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. T.W.

NEW ADVERTISEMENTS received by 10 A. M. December 13th will appear in the January issue, subject to limitation of space available.

MEN WANTED

POSITIONS OPEN

We can place: MANAGER also spinning superintendent and mechanical and electrical engineers in in India: worsted-woolen cloth superintendents, $10,000-$25,000 year; superintendent filament rayon fabric mill; assistant plant manager synthetic yarn fabrics $6,000-$9,000; superintendent woolen and worsted cloth sponging and shrinking; worsted yarn superintendents $10,000-$20,000 year; superintendent coated fabric plant; designing instructor textile school; man for planning and scheduling cotton goods in bleachery.

OVERSEERS FOR FOLLOWING DEPTS: slashing, cotton and rayon systems; calendering and embossing coated fabrics; cotton cloth room; woolen weaving, expert on automatic looms; cotton spinning and cotton weaving for Southern mills; cotton winding and spooling; woolen and worsted finishing; weaving also cuting, napping and finishing on corduroy (South); worsted dry finishing; garnetting; woolen carding; knit goods cutting; finished goods perching and final examining; woolen and worsted piece dyeing; worsted drawing; worsted spinning; jig dyeing; niece dyeing and finishing combined; general overseer cotton weaving, slashing and cloth room, Southern cotton mills $100 to $125 week.

SECOND HANDS FOR FOLLOWING DEPTS: woolen frame spinning; woolen and worsted finishing; cloth folding and packing; rayon weaving; cotton weaving for South America; worsted weaving.

MASTER MECHANICS and plant engineers; machinist familiar with bleaching, dyeing and finishing machinery; chief power plant engineers.

CHEMISTS and laboratory men $5,000-$10,000 year; chemist expert on cellulose acetate rayon; time study engineers; shoddy salesman; textile soap salesman; loom fixers cotton, woolen, worsted, rayon mills; pin setter; sewing machine fixers; hosiery machine fixers.

We invite correspondence (confidential) with executives seeking new positions and with employers seeking new personnel.

CHARLES P. RAYMOND SERVICE

Incorporated

Over Fifty Years in Business

294 Washington St., Boston 8, Mass.

Telephones: Liberty 2-6547—2-6548

WANTED - OVERSEER

FOR ASBESTOS FIBER PREPARATION AND CARDING OPERATIONS

Services of man who is qualified to supervise the above operations in a textile unit are required by manufacturer in New York State. Applications will be considered from men who may have had supervisory experience in this work or from men who by reason of training and experience believe themselves to be qualified to handle such a position. In replying kindly furnish complete personal and educational data as well as summary of experience.

P. 7179 Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

ASSISTANT SUPERINTENDENT

Large, single unit, independent fancy rayon weaving and throwing plant desires man between ages of 30-40 for Assistantship. Excellent opportunity for right man. Technical education desirable. If interested, write:

P. 7012 Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

SUPERINTENDENT AND GENERAL MANAGER FOR COTTON MILL IN BURMA

ALSO: ONE OVERSEER OF CARDING ONE OVERSEER OF SPINNING

The Government of Burma having contracted with H & B American Machine Company, Pawtucket, for the equipment of a new cotton mill, the first in Burma, to consist of 20,000 spindles making 12s to 20s yarn for hand weaving and also equipped with 200 looms for making coarse grey sheetings, is inviting applications for the positions above described.

Applicants for the position of Superintendent and General Manager should have the following qualifications: (1) Thorough knowledge and experience on the technical details of machinery settings, operation and maintenance; (2) previous experience in management of a similar plant; (3) should have experience in training inexperienced help and the ability to adapt himself to conditions in a new country; (4) ability to train and supervise department overseers.

Applicants for the positions of overseers must have had thorough experience in similar positions.

Term of contract proposed for Superintendent and General Manager would be from three to five years and for Overseers two to three years; with suitable or usual cancellation clauses. Overseers would be expected during the term of their contract to train Burmese Overseers to fill these positions at completion of their contracts.

Transportation for successful applicants and their families to Burma and return to U.S.A. at completion of contract would be provided. Furnished house would be provided rent free. At completion of contract one month's salary would be paid for each year of completed service as gratuity (except in case of termination of contract for misconduct). One month's leave of absence with pay would be provided each year, together with free medical service and accident insurance to the same extent provided other Government employees with equivalent rating. Provision would be made to permit taking out of Burma not to exceed two-thirds of salary.

Applicants should furnish complete information in first letter including record of experience, previous engagements, qualifications, references as to character and ability, age, salary expected. Any applicant should be prepared to go to Washington for interview and any applicant selected should be willing and able to report in Burma not later than June 1949.

Applications to be received up to and not later than December 13th, 1948 and addressed to Lockwood Greene Engineers, Inc., 10 Rockefeller Plaza, New York, New York, who are acting as Engineers for the project and who will transmit such applications for consideration.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

(Additional Position Vacant ads on page 296)

WANTED—YOUNG Man, preferably textile school graduate who has had at least one year in field of manufacturing of synthetic yarns and fabrics, for position as assistant quality control man. Plant location in vicinity of Gastonia, N. C. Apply for appointment to P-6241, Textile World.

WANTED—DRAPER loom fixer for cotton textile mill in South America—experienced man required. Give complete background and experience. P-6773, Textile World.

WANTED: MECHANICAL Engineer — Graduate or equivalent for automatic machine design and development. Must have proven flare for this work. Located in New Jersey, near Somerville. Send full resume of past positions and salaries. P-7111, Textile World.

SELLING OPPORTUNITY OFFERED

SPECIALTY SALESMEN wanted for large repair order item on all looms—Pilot Instrument Co., Boonton, N. J.

POSITIONS WANTED

PRACTICAL NARROW Fabric man, experienced weaver, loom fixer, designer and superintendent seeks responsible position with Trimming, Woven Label or Elastic Webbing Mfg. concern. PW-6685, Textile World.

(Continued on page 296)

AVAILABLE

WEAVING SUPERVISOR—DESIGNER

Textile School graduate in Czechoslovakia, age 32, single, linguist (seven) 10 years practical experience in weaving of cotton, woolen and worsted. Possessing general knowledge, experience and training including all departments from fleece to piece. Well versed in fabrics constructions, styling, analysis dobby, good on color. Full experience in production and quality control with all details of weaving and slashing operations. Efficient organizer, coordinator. Working with European and American Machinery (Draper-XD X2-XL and C & K). Ability to arrange plant layout, maintenance, handling people. Presently employed in a supervisory position (over 800 looms) closed together with the Superintendent, by an internationally known Company in South America, seeking wider opportunity. Available January 1949 in the States. Able to furnish experience and character references. Preferring California area, but would consider other location. Full information on request. Firms interested please state contract terms to

P. W. 6972 Textile World
330 West 42nd Street, New York 18, N. Y.

DYE HOUSE MANAGER

Thoroughly experienced, assume full control of all operations, good executive and production planner, quality and costs conscious, seeks new connection with progressive organization.

PW-7165, Textile World
330 West 42nd Street, New York 18, N. Y.

PLANT MANAGER

Of large European Textile Printing and Finishing Plant desirous of locating overseas. Expert colorist versed in all phases of roller and screen printing. 20 years experience. Highest references.

P. W. 7024 Textile World
330 W. 42nd St., New York 18, N. Y.

Additional Opportunity Advertising on pages 296 & 297

M.L.C.

Providence has a long and impressive list of textile "firsts" . . . . and speaking of firsts, "MLC" ranks first in the minds of many experienced buyers of textile machinery . . . men who want DEPENDABLE machinery plus prompt service plus certified VALUE at a substantial saving. Don't just "trust to Providence" to get you good textile machinery and equipment. Follow the lead of men who know—buy from "MLC".

HONOR ROLL

LEADING TEXTILE CENTERS OF AMERICA

PROVIDENCE, R. I.

Shortly after the Revolutionary War, the manufacture of homespun cloth started in Providence. A corduroy loom was also set up; but as no one knew how to cut and finish it, the enterprise died. The first-cotton thread spun by water in the U. S. was produced in Providence, where the first calendering machine was also installed, followed by the first calico printing with wood blocks. The first textile mill to use steam was erected in 1827 in Providence, producing the best yarn in the country. Today the territory within 30 miles of Providence is the greatest textile center in America.

"Certified for Leadership"

All ◂MLC▸ "Certified" Opportunities

No. 7 of a Series

1—18' Rusden Ager, 52" max. cloth width, with hot water heater, motor drive
1—72" C & M 2-cylinder Brushing machine
1—39" Textile 5 Roll Calender
1—41½" Knit goods calender, stainless steel rolls with motor Reeves drive
1—50" 3-roll Textile Hydraulic Calender, with pump and accumulator, motor driven
1—80" Butterworth 6 Bowl Calender, 3 Cotton, 3 Brass Rolls
1—60"V.V.I 3-cyl. Silk Calender
12—40" Lowell cards, 27" Doffers, 12" Coilers
5—C&M Flock Cutters
3—48" D&F Rub Condensers, Double Bank, Double Apron with Spool Racks

◂MLC▸ "Certified"

1—54" x 60" D&F 2-cylinder iron shoddy Cards with feeders
1—65" C&M Dewing Machine, motor driven
1—60" Windle 3C Doubler, motor drive
1—64" P&W Doubling & Rolling-up Machine with clock
1—Set of 31-40" face Butterworth Dry Cans
1—Set of 21-59" face Vertical Copper Dry Cans with motor, Reeves drive
1—96" P&S Loop Dryer
2—20 delv. Lowell & Saco Petee Drawing Frames 12" coilers
3—48" V. VL Stainless Steel Dye Jigs Motor driven
1—Raw Stock dyeing equipment with 1-1000# Motor Dyeing Machines, Blowers, Feeders, Dryers, etc.

◂MLC▸ "Certified"

1—Set 8 Textile Vertical 48"x23" Copper Dry Cans
1—36' P&S Loop Dryer width 8'
1—36" C&M Duster
1—7' D&F Iron Cone Duster with Feeder
1—18" Copper Basket Extractor
1—26" Tolhurst Extractor, belt driven
1—32" Tolhurst Copper Basket Extractor
2—48" American Humatic Extractors with Copper Baskets, Motor driven
3—60" Tolhurst Copper Basket Extractors

◂MLC▸ "Certified"

3—10", 42" E&H Flat Folders with take-up stands
1—Rodney Hunt M3, 2 string fulling mill, belt driven
10—10", 65" card and Napper Grinders
1—83" Roy Napper Roll Grinder
100—10" Draper Model K 20 Har Dobby Looms
99—45½" reed space Model E Draper Automatic Looms with lacey tops 3 bank stop motions, warm take-up, belt driven

PRINTING EQUIPMENT

2—New 60" R. B. F. 6 Color Printing machines suitable for large pattern work
2—New 50" R. B. F. 12 Color Printing machines
1—Used 64" R. B. F. 8 Color Printing machine
1—Used 54" Werner Single Color Printing machine

68—43" r.s. Draper Model X Looms, with 39" sands rolls, Brown 4-harness tops, motor driven
1—48" C&K 4 x 4 box Loom, 25 harness, belt driven, friction clutch
21—54½" C&K Box 20 & 25 Harness Dobby Looms
2—74" Heavy Duck Looms, roller top
11—82" C&K 2 x 1 automatic Looms, 8 harness cam motion, motor driven
8—100 C&K 2 x 2 Box Auto. Looms with Baker 3-mix attachments, 25 harness gem heads
6—110" C&K 4x1 Box Looms, 25 harness, belt driven
20—C&K 22' Ribbon Looms with intermediate gem heads, belt driven

PRICED RIGHT

5600 Spindle Cotton Mill Balance on ±40's Combed Yarn

75—New Leland & Westinghouse ½ and 1 HP 3/60/220 V Heavy Duty Motors. Also various size Rebuilt Motors
1—61" Woonsocket 2-cylinder Napper, 20 rolls to each cylinder
1—66" Gessner 16 roll single cylinder Napper
1—72" Gessner 18 roll single cylinder Napper
1—72" P&W 20-roll Double Acting Napper
3—80" D&F 20 roll single and double Acting Nappers

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* 3—Six to Fourteen Set Woolen Yarn Mills
* A Woolen Piece Goods Finishing Plant
* 3—Worsted Units
* 6—Cotton Mills, 3,000-100,000 Spindles 105 Looms Narrow Fabric Weaving Plant for Ribbons, Tapes and Labels. Complete with Warping, Dyeing and Finishing Equipment
* 1—Novelty Yarn Plants
* 1—Twine Manufacturing Plant

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3—66" P&W 60 & 100 yd. Measuring Machines, belt driven
1—70" King & Gerber Tubing Machine with Veeder-Root counter
2—240 SP.J. & B. 1⅞ Ga. Mules
1—392 Spindle Smith 2" Gauge Mule
2—240 Spindle J & B 2" Gauge Mules

◂MLC▸ "Certified"

1—30 x 30" Mezerra Wool Opener
1—48" D&F 2-Cyl. Wool Opener with Feeder
1—40" H&B Single Process Picker with Eveners, Kirschner Beater, Ball Bearing Beaters with Condenser
9—10" Kitson Breaker Pickers, Finisher Pickers and Single Process Pickers, motorized
1—48" C.D. Sargent Burr Pickers
3—48" & 54" Fearnaught Pickers
1—86" Voelker Press Motor Dr.
6—52", 65½, 66, Voelker and Gessner Single and Double Bed Rotary Cloth Presses
1—50 spindle Lindsey-Hyde Adjustable Reels
5—82", 92", 96", and 100" D&F Pin Type Reels, with creel, back stand, neck reed, warp reel beamer and warp compressor
3—60" P&W Single Blade Woolen Shears
1—50" Hermas Shear with C&M Stitcher

◂MLC▸ "Certified"

1—66" Parks & Wilson single Blade Plush Shear
11—66½" P&W 2-blade Shears
1—76" C&M Double Blade Shears
1—80½ P&W Single Blade Shears
2—Cameron Model 26 Slitters, motor driven
1—42" Firsching 20-knife Slitting Machine
2—Lowell 2 cylinder Slashers
1—40' Textile Clip Tenter, 60" opening with Housing
1—40' Hoey Clip Tenter, 60" opening with Housing
1—90' W & J S. S Clip Tenter, 102" opening with Housing
1—40' Kenyon Pin Tenter, 42" opening
7—70' Kenyon Pin Tenter, 46" opening

◂MLC▸ "Certified"

1—60" C&M Single Brush type Tiger
1008 SP. S.L. 3" Ring Band Driven Twisters
96 H&B 4¼" Ring Tape Driven Twisters
3—80 Spindle Hopedale Band Driven Twisters 4½" ring, 5¼" ga. Belt driven
1—210 spindle Draper Twister, 2" ring
2—8-string Hemmer Wool Washers
7—100 Sp. Foster Model 12 12A-21A Tube & Cone Winders
1—90 Sp. Foster Model 30 Cone Winder

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1—Pegg Stainless Steel Skin Dye Kettle.
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1—Sheridan Press, 60" x 24" Plate.
1—Van Vlaanderen 60" Ball Bearing Calender.
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1—Cocker Ball Warper.
1—Franke Willow Machine.
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1—Hunter 7 section Raw Stock Dryer
1—D. & F. 7' all iron Cone Duster
1—C. & M. Parkhurst 48" Burr Picker with Feed
1—S. F. 36" Lumper, b.b.
1—Sargent 48" Rag Duster
1—Clark 46", 12 bar Mixing Picker (new)
5—Schofield 18"x30" Waste Pickers
1—Schofield 42" Carding Rag Picker
2—Schofield 48" automatic Dusters (Box)
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3—Altemus Long Chain Beamers
1—Worcester Cone Creel, elec. stop motion Magazine type, 176 active ends
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1—C&M 170" Rolling Teasel Gig
1—P&W 66" Double Cloth Shear
2—P&W 66" Plush Shears
1—Gessner 66" Heavy Duty Press
1—Perkins Cloth Piler 72" Trav.
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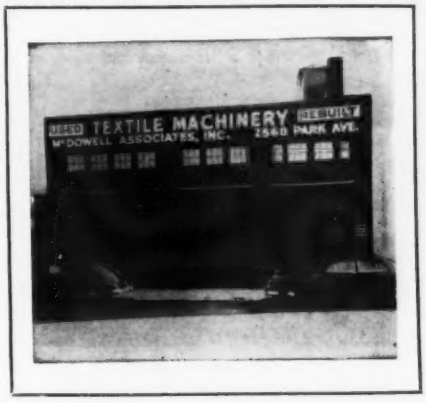

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1 D&F new FLYNN CARD CLOTHING TENSION MACHINE 60".
1 D&F iron WOOL CARD 48" x 60", 4 cyl., TAPE CONDENSER.
1 D&F iron WOOL CARD, 48" x 48", ring doffers.
10 S.A.C.M. 2 cyl. WORSTED CARDS, 60".
3 WHITIN CONDENSERS, tape, 48", 4 bank, 96 ends each.
2 FOSTER #25 DOUBLERS, 60 spindles each.
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1 Roy new 60" TRAVERSE GRINDER.
8 D&F MULES, 360 spindles ea., 2½" gauge, 14" bobbin.
5 J&B MULES, 288 spindles each, 2⅛" gauge, 8" bobbin.
2 SCHIMMEL MULES, 480 spindles ea., approx. 1¾" ga., 8½" cop.
1 C&M BURR PICKER, 48" double cyl.
1 SARGENT duplex BURR PICKER, 48".
1 CLARK MIXING PICKER, 48" ball bearing.
1 C&M FEARNAUGHT PICKER, 48" x 48".
1 Butterworth RAG PICKER, 20" x 30", b.b. cyl.
1 WHITIN ROVING FRAME, 80 spindles, 8x3½.
1 WHITIN ROVING FRAME, 100 spindles, 8x3¼.
5 WHITIN MODEL A SPINNING FRAMES, 3" ring, 4½" ga., 192 spdls. ea.
1 WHITIN SPINNING FRAME, 48 spindles, 3" ring.
1 WARP COMPRESSOR SPOOLER, Model M, H.S. 48".
1 WHITIN TWISTER, 40 spindles, 5½" gauge, tape drive.
3 H&B TWISTERS, 4½" gauge, 156 spindles ea., band drive.
2 F&J TWISTERS, 5½" gauge, 100 spindles ea., tape drive.
8 S-L TWISTERS, 5½" gauge, 120 spindles ea., tape drive.
1 WHITIN SPIRALWHORL BUCKLEY CLEANER, cyl. 64".
1 TERRELL BOBBIN CLEANER, type K, motorized.
22 D&B COTTON CARDS, 40".
60 WARP COMPRESSOR CREELS, 432 spindles each, 6" centers.
1 PLATT ROLLER TOP CARD, 50".
2 WHITIN INTERMEDIATES, 9x4½, 112 spindles each.
1 H&B single process PICKER, 1926 model, 40" width.
4 REELS, adj. 54"—72" skeins.
1 S-L ROVING FRAME, D-2 Ld. 8x4, 152 spindles.
2 S-L SLUBBERS, Ld. 10x5, 96 spindles ea.
4 WOONSOCKET SLUBBERS, Ld. 10x5, 96 spindles each.
4 S-P. SLUBBERS, J-1, Ld. 9x4½, 100 spindles each.
18 WOONSOCKET SPEEDERS, J-1, Ld. 8x4, 128 spindles each.
13 S-L SPEEDERS, 8x3½, 160 spindles each.
4 WOONSOCKET SPEEDERS, J-3, Ld. 8x4, 152 spindles.
12 S-L SPEEDERS, J-2, 7x3½, 160 spindles ea.
30 WHITIN SPINNING FRAMES, 3" gauge, 252 spindles ea., band drive.
6 WHITIN SPINNING FRAMES, 3½" gauge, 216 spindles ea., band drive.
12 WHITIN SPINNING FRAMES, 3' gauge, Ld., 228 spindles ea., tape drive.
1 B-C. TYING MACHINE, Model E, 108" bed.
5 SIPP-EASTWOOD WARPERS, 85", 3248 end creels, motorized.
1 COCKER H. S. WARPER, 54", 560 end magazine Creel.
4 B-C. HIGH SPEED WARPERS, h.w. model, 432 end creels.
1 FIDELITY BOTTLE WINDER, 15 spindle, 1945 model.
2 FOSTER WINDERS, Model 12, 60 spindles ea., skein attachments.
1 FOSTER WINDER, Model 101, 40 spindles.
2 ABBOTT WINDERS, 80 spindles ea.
2 FOSTER WINDERS, Model 30, 100 spindles ea.
1 UNIVERSAL #44 ROTO CONER, 120 spindles.

WEAVING

104 C&K LOOMS, 52", S-5, 2x1 automatic, 20 harness dobby, b.b. crankshaft and clutch, motorized, 550 volt.
4 C&K LOOMS, 82" 4x1 automatic, 25 harn., temples, pick counters, friction runoff motion, motorized, 550 volt, A.C. motors.
20 C&K LOOMS, 82", 8 harn. cam, temples, multipliers, ratchet takeup, friction runoff motion, mechanical warp stopmotion, pick counters, motorized, 550 volt.
26 C&K LOOMS, 82", 4x4 box, 25 harn., intermediate worsted heads, worm takeup, 2x1 gearing, temples, center filling fork, 4 bank E.W.S.M., 3 shift pick counters, motorized, 220 volt.
16 C&K LOOMS, 92", 4x4 box, 30 harn., E.W.S.M., temples, motorized, 550 volt.
8 C&K LOOMS, 100", 4x4 box, 25 harn., temples, belt driven.
132 DRAPER E LOOMS, 40", 5 harn., 24 bobbin battery, midget feeler, friction letoff, mechanical warp stopmotion, belt driven.
20 DRAPER MODEL E LOOMS, 40', 16 harn. dobby, Roper letoff, ratchet takeup, feelers, motorized, 220 volt, 3 phase, 60 cycles.
144 DRAPER E LOOMS, 40", 5 harn., feelers, cutters, Roper letoff, belt driven.
56 DRAPER K LOOMS, 48" B.S., 6 harn. cam, 4 bank E.W.S.M., worm takeup, feeler, friction letoff, motorized, 220 volt AC motors.
18 DRAPER K LOOMS, 52" reed space, 5 harn. cam, Stafford cutters, rayon temples, friction letoff, 4 bank E.W.S.M., motorized, 220 volt AC motors.
54 DRAPER XP LOOMS, 60", Brown double action top, 6 harn. cam, thread cutters, Roper letoff, 6 bank E.W.S.M., motorized, 550 volt.
32 DRAPER MODIFIED D LOOMS, 70" reed space, mechanical stop, feelers, pick counters, 2 harn., roller top, belt driven.
24 DRAPER MODIFIED D LOOMS, 80½" reed space, 2x1 automatic, 20 harn., center filling form, motorized 550 volt.
24 DRAPER D LOOMS, 90" reed space, cam head, 4 harn., 20 bobbin battery, motorized, 550 volt, AC motors.

DYEING

3 BATCHERS, 48", 50" and 60".
1 C&M 6 roll Vertical BRUSH, 50".
1 C&M CALENDER ROLLING HEAD, 48".
1 GRANGER 3 roll FRICTION CALENDER, 43½".
1 TEXTILE 3 roll CALENDER 100".
2 P&W DOUBLERS, 66"—72".
1 HACKNEY DOUBLER AND FOLDER, 72".
1 CAN DRYER, 6 copper cans, 72"x36" dia.
1 P&S LOOP DRYER 84", housing, air fin heaters.
1 KENYON PIN DRYER, 44"—84" width, complete.
1 P&S SKEIN 2 truck DRYER.
1 RH enclosed 6' stainless steel DYE KETTLE.
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1 K-W. SKEIN DYEING MACHINE, 28 stick.
6 EXTRACTORS, 26"—60".
1 GESSNER VACUUM EXTRACTOR, 78".
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1 HUNTER FULLING MILL, #20, double compartment.
4 C. & M. INSPECTING AND WINDING MACHINES, 58".
1 MANGLE, 3 rubber rolls, 120".
1 P&W. MEASURING MACHINE, 42".
3 WOONSOCKET NAPPERS, S.A. 14 roll, 72", 80" and 90".
1 D&F. NAPPER, D.A. 24 roll, 80".
1 D&F. NAPPER, D.A. 36 roll, 80".
1 D&F. NAPPER, 24 roll, 86", D.A.
1 VAN VLAAN. PALMER, 64" x 60" dia. cyl. motorized.
1 VAN VLAAN. PALMER TENTER QUETCH UNIT, 50".
5 LUTHER 2 brush THREAD POLISHERS.
3 ROTARY STEAM PRESSES, 66½"—68", double bed units.
1 REEVES new #3 DRIVE.
3 C&M RAILWAY SEWING MACHINES, 40"—66".
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1 P&W. 4 blade 60" PICKING SHEAR.
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1—Tenter Frame, 90'x100", with housing
1—Set 8 Copper Dry Cans, 72"
1—P&W Napper, 62' face
8—Dye Becks, 12'-14' long, with reels
1—National Loop Dryer, 84' wide
1—Van Vlaanderen Tuber, 50" motor
1—Friction Calender, 3 rolls, 50"
4—Cottage Steamers
6—Morrison Dye Jiggs, 50"
1—Set 42 S.S. Dry Cans, 50"
1—Hercules Extractor, 60"
1—Smith-Drum Rotary Dye, 100 lbs.
1—Hydraulic Calender, 3 rolls, 60"
1—P&S Skein Hurricane Dryer
1—Van Vlaanderen Calender, 3 rolls, 46⅓"
1—Woonsocket Napper, 36 rolls, 50"
1—Werner Palmer Quetsch Unit, 48" width
1—P&S Loop Dryer, 50' long
1—Morrison Rayon Calender, 50"
1—Grand Rapids 3 roll Steam Calender
1—K&G Embossing Calender
1—Butterworth Calender, 3 bowl, 50"
3—John Hope Pantograph, 51" width
1—Butterworth Hydraulic Baling Press
1—Rotary Plate Singer, 50"
1—Color Kettle, 30 gal.
1—Van Vlaanderen Padder, 50"

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Cotton Spinning & Weaving, 12,200 spindles, 300 looms
Cotton Spinning, 3,500 spindles
Worsted Spinning, 3,500 spindles
Worsted Mill, 5,340 spindles
Woolen Mill, 1,200 spindles, 20 looms
Woolen Spinning, 1,600 spindles

WEAVING

110—Draper Hopedale Rayon, 40"
200—Model E Draper, 47½" r.s.
24—Draper 82", 2x1 box
24—C&K 82", 2x2 box
12—C&K 82", 4x4 box
20—C&K Narrow Fabric, 42 space
50—C&K 46", 4x1 box, automatic

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1—Saco-Lowell Vertical Opener
1—Jenks Mixing Picker, 30"
8—Kitson Feeder Hoppers, Model F-2
1—P&S Double Doffer Garnett
1—Butterworth Hydraulic Baling Press
2—Worsted Cards with Gill Box
3—Furbush Cards, 48x60
1—D&F 46x48 Wool Card, iron
50—H&B 45" Cards
27—H&B 40" Cards
4—Saco-Lowell Jack Spoolers
1—Model M.H.S. high speed Spooler
35—H&B Spinning Frames, 256 sp. 3" ga.
24—F&J Spinning Frames, 216 sp. 3" ga.
4—Whitin 7x3⅓ Roving Frames, 176 sp.
2—Saco-Pettee 10x5 Roving Frames, long draft
2—J&B Mules, 360 sp. 2¼" ga.

WINDING

12—Universal Winders #90, 20 sp.
2—Foster Winders #12, 40 sp.
3—Saco-Lowell Lap Winders, 9"
2—Foster Winders #101, 80 sp.
3—Staubli Cap Winders
1—Foster Winder, 50 sp. tubes

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1—3 Roll 45" Motor Driven Quetch
1—40' 60" Winsor & Jerauld Tenter Frame, complete.
1—V. V. 66" Palmer unit, complete with Quetch and Tenter Frame.
1—V. V. 54" Embossing Calender No. 2 Pattern.
2—50" Werner Dye Jiggs S. S. lined.
2—56" Morrison enclosed gear copper lined Dye Jiggs.
2—54" General enclosed gear S. S. line Dye Jiggs.
1—Set of 9—20" x 60" Heavy Steel Dry Cans.
1—Set of 6 copper cans, vertical, Reeves & motor.
1—Set of 7 copper cans, horizontal, Reeves & motor.
1—Set of 3 copper cans, 36" diameter by 60" face.
1—50" V. V. Button Breaker.
1—48" Tolhurst Centrifugal Self Balancing Extractor, with motor on side.
1—36" motor driven self balancing Hercules Extractor.
1—60" V. V. M.D. Horizontal Extractor.
2—60" motor driven beamers.
2—60" M.D. Tubing & Measuring Machines.
1—60" Measuring, Inspecting & Tubing Machine, tube to tube, new, variable speed, forward, neutral & reverse.
60-80 gallon stainless steel steam jacketed Kettles.
30-60 gallon copper Steam Jacketed Kettles.
2—motor driven 84 spindle Fletcher Duplex Machines.
1—Knapp Direct Ribbon Warper.
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1—Sterling 7½ H. P. Vari-drive.
1—Reeves 7½ H. P. Vari-drive.
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1—Universal Winder with motor.
1—Hand card cutting machine for jaquard.
4—Jaquard heads.
Extra parts, etc. Excellent condition and priced for quick sale.
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6 FOSTER MODEL 75-A For COTTON; Motorized, complete with Waxing Attachments.

GOOD USED MOTORS

WESTERN ELECTRIC

A.C. TYPE KT SERIES 100, 3-PHASE, 220 VOLTS, 60 CYCLES.

225 2 H.P.	1200 R. P. M.
90 3 H.P.	900 R. P. M.
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ALSO MISCELLANEOUS MOTORS IN VARIOUS SPEEDS AND PHASES.

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ATWOOD DOUBLE DECK

C-TYPE—4¼" Spindle Spacing

Individually Motorized, New Bobbin Equip.. Ex. Cond.

4—200 spindles

4—184 spindles

6 FLETCHER

MOTORIZED 1934 MODEL

6" Gauge Single Deck Twisters

3—80 spindle machines and 3—70 spindle with 6⅛" centers, 3½" wide cork covered take-up pulleys, 4½" diam. motor pulleys, 3 HP General Electric motors with starting switches. 220 volts, 60 cycles. Machines in excellent condition. Excellent Bobbin Equipment Available for These Machines at Low Cost.

6 ATWOOD 5-B SPINNERS

All individually Motorized 2 HP, 3 Phase 220 Volts, 60 cycle motors. Bobbin Equipment with all machines.
1—104 spindle, 4" spacing, 3" rings, 2" feed rolls.

13 FLETCHER

5-B SPINNERS

All individually Motorized 3 HP, 3 phase 220-440 volts, 60 cycles, 84 spindles, 5¼" spacing, 3⅛" Whitin rings, double 2" feed rolls. Excellent condition. Bobbin Equipment with machines.

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7 Late Type
U. S. Textile Redraws
80 Spindles MOTORIZED
Complete with Tensions, etc.

8 ATWOOD SKEIN WINDERS

FOR SILK OR RAYON
100 SPINDLES EACH
INDIVIDUALLY MOTORIZED

2 COCKER
11 DRUM 60" Wide 30" Diameter Drums

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Almost NEW
Used Only 16 Months

Stainless steel drums, 5 beam take ups double Quetch, Reliance single motor variable speed drive 15 H.P., 1150 R.P.M. Taylor instruments and piping. Special reeds 1½" wide, Johnson joints bearings and flexible tubing.

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18 C & K—4 x 4—68"

Dobby head type

★ LOOMS, Excellent condition.
★ INDIVIDUAL MOTORS, 3 phase, 220 volts.
★ 3 SHIFT PICK COUNTERS
★ HEAVY DUTY TYPE ROLLER BEARING

Looms must be seen for full appreciation of value!

11 C & K—2 x 1—5⁶⁄"

20 Dobby

★ OPERATING CONDITION, Heavy Duty
★ INDIVIDUAL MOTORS, 3 phase, 220 volts.
★ CENTER STOPS
★ VEEDER ROOT - pick counters

Your Inspection Invited . . . .

4 C & K—4 x 4—68"

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★ INDIVIDUAL MOTORS, 3 phase, 220 volts.
★ CENTER STOP

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1—LYDON All Electric Steam Box—200 lb. capacity
3000 Brugger Adjustable Swifts for Rayon or Silk
300 Self Stacking Cone Trays—All Metal
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75,000—3 Ring Automatic Bobbins, 7⅜"
50,000—7" Paper Caps with Metal Lip
30,000—1 Lb. St. Steel Head 4½" x 4⅜" Trav. Stenning Shafts

MOSSBERG All Steel Beams

1,000—12" head, 10½" trav.
500—12" head, 18½" trav.
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2,000— 9" head, 2" trav.
4,000— 9" head, 3" trav.
300—18" head, 10½" trav.
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1,000 FLETCHER AUTOMATIC LET-OFFS 4 pin and 6 pin

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1 Reiner 1947 Direct Warper with 300 Beams
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NEW Worsted and Woolen Cards, Combers, Spinning Frames, Mules, on the French System. Delivery almost immediate.

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12—C & K W-3 92" Looms.
12—C & K W-3 100" Looms.
24—C & K 4 x 1, 82" Looms.
24—C & K 2 x 1, 72" Looms.
48—C & K 100 Draper Model D. 50"
72—Draper Model E 47½"
60—Draper Model E 45"
40—C & K 2 x 1 52"
24—C & K 4 x 4, 100"
36—4 x 4, 82"
500—Draper Model E 40"
12—WHITIN Spinning Frames, Long Draft.
24—Woonsocket Cards 40", 12" coilers.
2—Barber Coleman Warp Tying-in Machines, Model J16, size 4J.
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3—Barber-Colman Automatic Spoolers.
3—Collins Twisters.
25—FOSTER Winders.
3—WHITIN Twisters.
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All above cards have iron cylinders.
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C & K 2 x 1 **C & K 4 x 1 with multiplier**

Roller Bearing, Shock Absorber, heavy bar, individually motor driven, 20 harness dobby

12—Model E Automatic Draper Looms, 53½" Reedspace, Motorized, completely reconditioned with Stafford Cutter and Midget Feeler

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32—80½" Reedspace Draper Automatic Quill Change, Double drive looms, individually motor driven, with electric stop motion, some equipped with 600 hook, double lift Jacquard machines

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4—H & B Waste Machines, sgl. Beaters
25—F-2 & F-5 Feeder Hoppers, new & used
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USED TEXTILE MACHINERY AND SUPPLIES
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33—24 carrier #1 full elastic braiders. Side can take-off and mounted on short legs at $25.00 each.
The above offered subject to prior sale.

ELASTIC FABRICS, INC.
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18—68" reed space, C & K 4 x 4, dobby roller bearing, electric stop motion, motor driven.
28—72" cloth space, Modified "D" Draper cam looms, belt driven, mechanical warp stop.
40—80½" reed space, Modified "D" Draper, Motorized, electric warp stop, 16 harness intermediate reed.
10—60" cloth space, Draper "D", 20 harness dobby, electric warp stop, motorized.

NEW SILK CREELS

NEW HERMAS 64" Measuring machine. Running C & K, Draper plants.

NEW motors for your looms, winders, quillers, GE, WESTINGHOUSE, SHELBY, and MASTER.

Universal quillers, winders, beams, and harnesses.

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with additional space for expansion. Will retain personnel management if necessary.

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(Continued from page 286)

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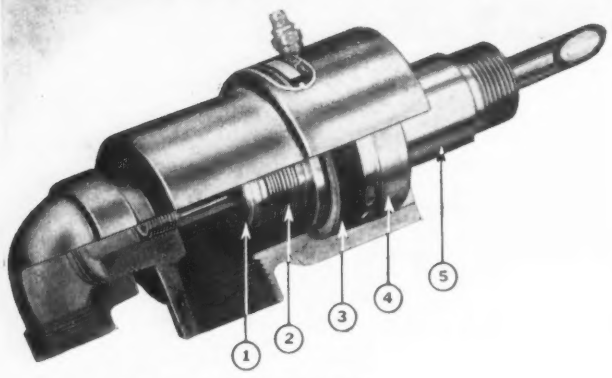

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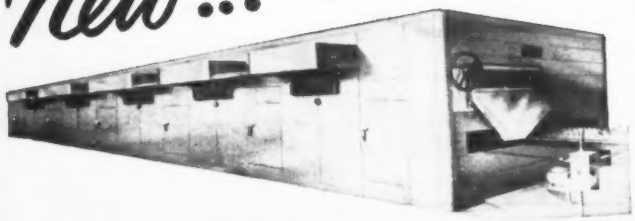

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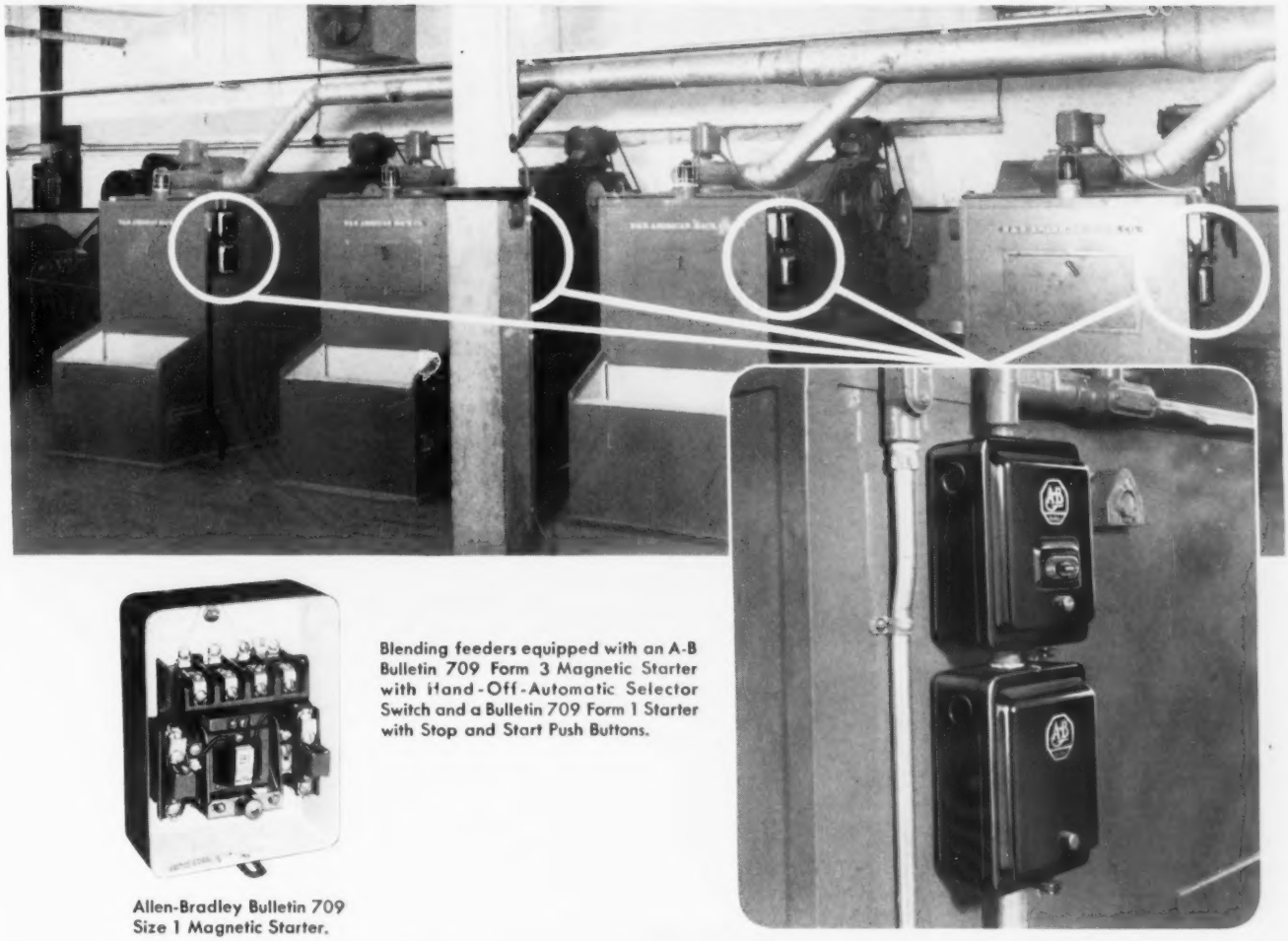

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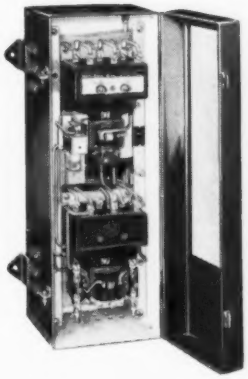

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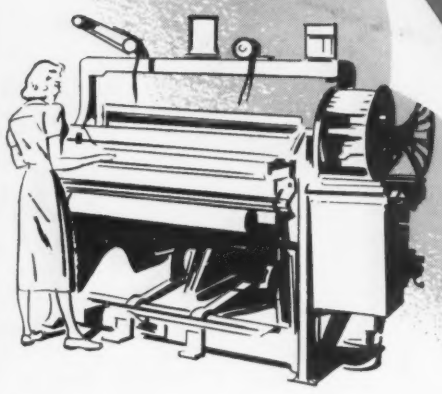

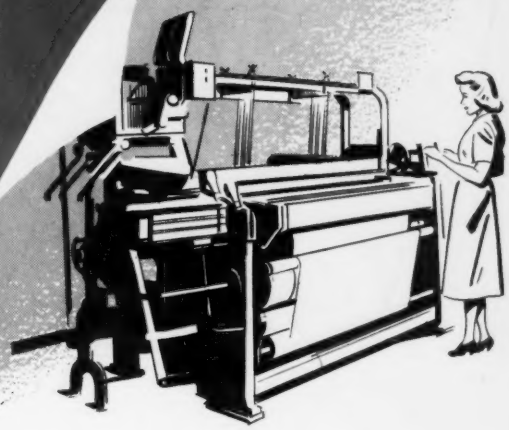

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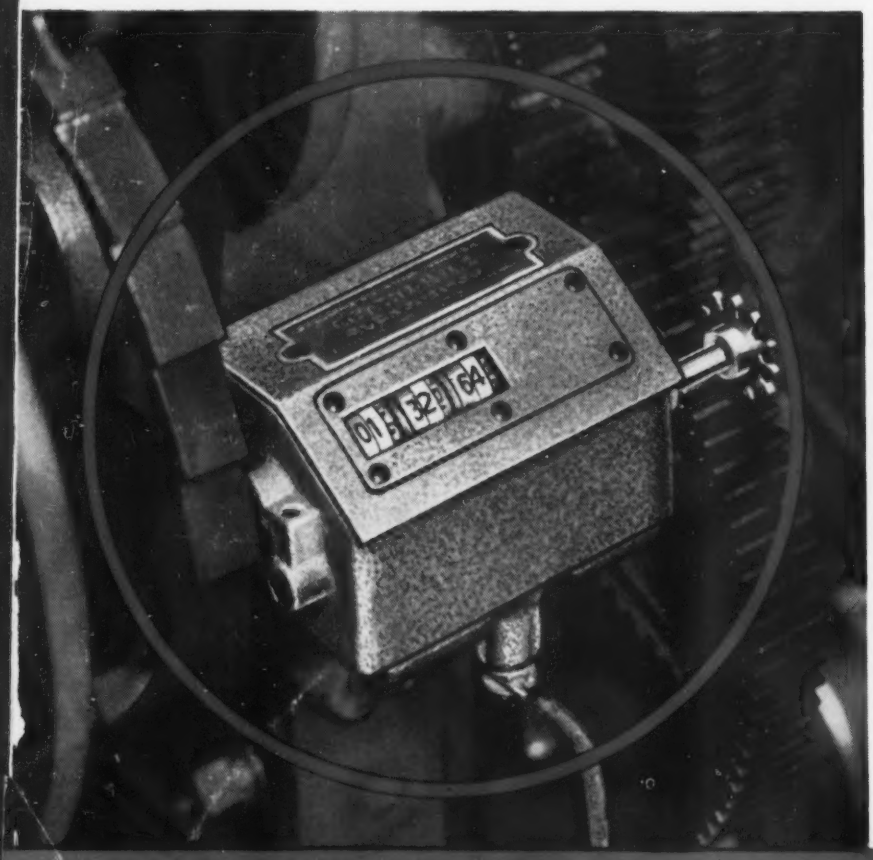

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